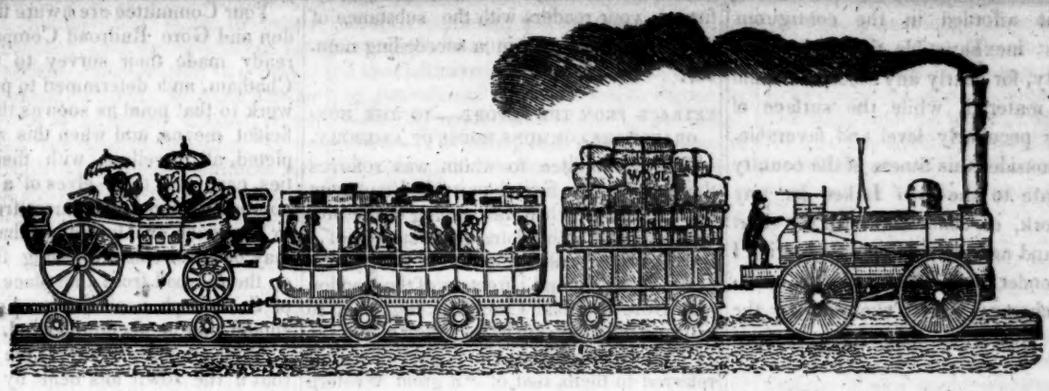

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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D. K MINOR, and GEORGE C. SCHAEFFER, } EDITORS AND PROPRIETORS.] SATURDAY, FEBRUARY 18, 1837. [VOLUME VI—No. 7.

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, FEBRUARY 18, 1837.

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GREAT WESTERN RAILROAD IN UPPER CANADA AND MICHIGAN, AND CONCENTRATION OF IMPROVEMENTS AT THE TOWN OF HURON, FOOT OF LAKE HURON, MICHIGAN.

Our readers will remember, that in the Journal of last week we inserted, as taken from the "St. Thomas (U. C.) Liberal," an account of a meeting of the Directors of the "Detroit and Niagara River Railroad Company," held at Toronto; and also a Letter from E. A. Brush, Esq., of Detroit, advocating the contemplated improvement; since then we have received additional information of movements making for the accomplishment of the same object—*a Great Western Railroad*—but by a different and much shorter route, which we now lay before them for their consideration.

To the Editors of the Railroad Journal.

GENTLEMEN,—I find in the last number of the Railroad Journal, an account of the proceedings of a meeting of the Directors of the "Niagara River and Detroit Railroad Company," held at Toronto, on the 3rd of January last; accompanied by a letter from E. A. Brush, Esq., comparing the relative advantages of the two routes through Canada, viz.: from Black Rock to Detroit, and thence across the peninsula to St. Josephs, with that from Hamilton, at the head of Lake Ontario, to Fort Gratiot, at the foot of Lake Huron, and from thence in a direct course to Grand River, on Lake Michigan.

When the geography of the North and West is considered, one thing appears beyond a doubt: that to complete the line of *direct* commercial communication between the Atlantic and the Mississippi, a section of the route must pass over the southwestern corner of Upper Canada. The Company, the proceedings of whose Directors you published last week, has been formed for the construction of such a road from Black Rock to Sandwich or Detroit; and the meeting was held for the purpose of raising funds, and taking measures for the employment of an Engineer. But there is a question whether this would be the most eligible route. There surely are serious objections to it. It would be a Railroad running nearly parallel with the shore of Lake Erie, a distance almost equal to its whole length; and terminating at the two points indicated, it would be connected with neither of the great Lakes, not even with Lake Erie; but the Internal Commerce of those great waters, which must a some day be of such immense importance, would be subject to all the delay of River navigation, before its commodities could reach the main thorough are to the Ocean. The route proposed, different from this, and which the subjoined report so strongly advocates, is to connect the head of Lake Ontario, almost in a direct line, with the foot of Lake Huron. This route *shortens the distance at least one half, if not more.*—A single glance at the map shows the natural directness of this route. Every

facility is afforded in the contiguous and almost inexhaustible timber lands of the vicinity, for nearly any amount or kind of wood material, while the surface of country is peculiarly level and favorable. When I consider this fitness of the country intermediate to the two Lakes for any public work, in connexion with the short distance and near abundance of material, I almost wonder how, among all the enterprising schemes which characterize the age, this should so long have escaped notice.

From late intelligence, however, it would appear that the opening prospect of this road, although late, has yet met with a degree of favor proportioned to its lateness. It will be seen from the report following, that the Special Committee of the Commons of Canada, most strongly urge upon the attention of Parliament, the advantages of this route, as emphatically the route of the "Great Western Railroad." The loan of $800,000, which they advise to be made to the Company, already chartered for the construction of a road the greater part of the distance, shows clearly their opinion of the importance of the measure, as well as the enterprising spirit with which they hasten its completion.

I will remark too, while upon the subject, that this example of Canada, has not been without its influence upon Michigan. Indeed, the interest of the two is so intimately connected with this concentration of improvement at the foot of Lake Huron, that it would have been truly singular if she had not stepped forward to give another signal proof of the characteristic public spirit of her citizens. By late intelligence, I learn that the Committee on Internal Improvements of the Legislature, now in session at Detroit, in their general report, recommend the construction, by the State, of two grand Railroads across the Peninsula, viz: one from Detroit to St. Josephs, and the other *from Fort Gratiot, or Huron, to Grand River.* They urge the House to consider these as government works, and upon a fund of $5,000,000, to be loaned expressly for the purpose, to assume the direction and provide for the immediate construction of them. Notice is also given in the Detroit papers, of an application to the present session for a charter to construct a road from Detroit to Huron, at the foot of the lake. This will complete the chain, and thus, taken in connexion with routes of communication West of Lake Michigan, between Chicago and the Mississippi, we have the great Northwestern thoroughfare from the Valley of the West to the Eastern ocean completely defined and adjusted. I will soon furnish your readers with the substance of the Michigan, report in a succeeding number.

EXTRACT FROM THE REPORT.—TO THE HONORABLE THE COMMONS HOUSE OF ASSEMBLY.

The Committee to whom was referred that part of His Excellency the Lieutenant Governor's speech at the opening of the present session which relates to the subject of a great western railway, and also the petition of the President and Directors of the London and Gore Railroad Company, beg leave to transmit the following as their first report:

That having given the important matter referred to them, that of "a great Western Railroad, as being of infinite benefit to the Province, as well as promoting our friendly intercourse with the neighboring States," in connection with the before mentioned petition, their best consideration, your committee are of opinion that the route taken up by the London and Gore Railroad Company, from the head of Lake Ontario to the town of London, is the proper one for accomplishing the object recommended by His Excellency, and to give so laudable a purpose full effect, your committee recommend that the charter of the London and Gore Railroad Company should be amended, if they do not at present possess sufficient authority, so as to enable them to continue their line of route from the town of London to Point Edward, at the foot of Lake Huron, and that your Honorable House should address His Excellency the Lieutenant Governor, praying that His Excellency will be pleased to set apart the proceeds to be derived from the sales of the Crown Reserves in the several townships in the London and Western Districts which have been surveyed since the granting of the Canada Company's charter, as well as the proceeds of such other lands of the Crown in that portion of the Province as may be yet subject to the disposition of His Majesty's government, to be applied in the construction of the said Railroad. On this subject your committee have agreed to an address, which they take leave to report herewith, and recommend to the adoption of your Honorable House.

Your Committee are deeply impressed with the belief, that the facilities which will be created by the completion of "a great Western Railroad," for all kinds of travelling and goods passing in transitu, and the transportation of the surplus products of the portion of country through whose vicinity it will pass, to their proper markets, besides increasing to an incalculable degree our powers of production, will add greatly to the value of the waste lands of the Crown in the western portion of the Province particularly in the rear of the north western coast of Lake Huron, the exploring of which has hitherto been neglected. And your Committee will add, that the completion of the work will afford the most ample facilities to our neighbors of the American States, who will find it to their advantage to pass through the Province on their way to the great western interior of their country, by which means the tolls and profits of the work, and the necessary resources for keeping it in repair will be increased in a degree commensurate with the business which the improvement will create.

Your Committee are aware that the London and Gore Railroad Company have already made their survey to the town of Chatham, and determined to prosecute the work to that point as soon as they have sufficient means, and when this work is completed, all travellers, with their commodities, can avail themselves of a daily water communication by steamers from Chatham to Sandwich or Detroit, so that those who may be desirous of passing from Detroit on the railroad from that place to the town of St. Joseph, near the head of Lake Michigan, can be accommodated.

Your committee beg leave to suggest that if the town lots held by government in the several towns of London, Brantford, and Chatham, and in all other town plots which may hereafter be laid out in the vicinity of the said route under the authority of Government, will be readily sold after the public confidence is well established in the work, and that the proceeds thereof would go very far towards the completion of the same—that the commencement and vigorous prosecution of the work will excite a spirit of emulation, enterprise and activity throughout the western country hitherto lying dormant. That a considerable portion of the people of this Province, occupying some of the best lands in the country through which it is intended said railroad shall pass, are completely shut out from market for want of a proper internal communication. That the completion of this would have the effect of securing to this Province the principal part of the travel now crossing Lake Erie in American bottoms, and diverting the same to Lake Ontario, and by that means through the St. Lawrence Canal—thereby rendering the work truly a great national undertaking.

That your committee would recommend that the stock of the said Company be increased to the sum of £500,000, and that a loan of £200,000 be granted to the said Company on the following terms and conditions, and that the same be secured out of the Public revenue.

Your committee have agreed to the subjoined resolution, which they earnstly recommend to the adoption of your Honorable house.

All which, is respectfully submitted.

ALLEN NAPIER MACNAB.
Chairman.

Resolved, That there be granted to His Majesty, the sum of £200,000 to be advanced by way of loan, to the London and Gore Railroad Company as circumstances may require, on the credit of the Public revenue. That the same be secured to the Province by the said railroad, and all its works, and that the style and the title of the said Company be henceforward changed to that of "the Great Western Railroad Company."

ADDRESS TO HIS EXCELLENAY THE LIEUTENANT GOVERNOR, REPORTED BY THE COMMITTEE.

MAY IT PLEASE YOUR EXCELLENCY,—WE, His Majesty's most dutiful and loyal subjects, the Commons House of Assembly of Upper Canada, in Provincial Parliament

assembled, humbly beg leave to inform Your Excellency, that we have taken into our most serious consideration that part of Your Excellency's Speech from the Throne at the opening of the present Session, which recommends the construction of a "Great Western Railroad as being of infinite benefit to this Province, as well as promoting our friendly intercourse with the neighboring States."

We entirely concur in the sentiments expressed by your Excellency, and are of opinion that the important object can be best attained by extending the charter of the London and Gore Railroad Company, and determining the Western part of its route to be from the town of London to Point Edward, at the foot of lake Huron, or head of the river St. Clair. The "great Western Railroad" will then be from the head of lake Ontario to the foot of lake Huron, a distance of 132 miles.

And for the furtherance of this most desirable object, we humbly pray that your Excellency will be pleased to set apart the proceeds to be derived from the sales of the Crown Reserves in the several townships in the London and Western districts, which had been surveyed since the granting of the Canada Company's charter, as well as the proceeds of such other lands of the Crown in that portion of the Province as may be yet subject to the disposition of his Majesty's government, to be applied in constructing the said great Western Railroad.

At a Meeting of the President and Directors of the Baltimore and Ohio Railroad Company held yesterday, the following preamble and resolutions were adopted—copies of which have been furnished to us—and which we take great pleasure in publishing. confident as we are, that the appeal, thus made to the citizens of Baltimore, deeply interested as they most undoubtedly are, will be promptly responded to—

"*Whereas* it has been represented to the Board of Directors of the Baltimore and Ohio Railroad Company, that unless the sum required to be subscribed to the Staunton and Potomac Railroad Company, before that Company can go into operation, to wit, the sum of five hundred thousand dollars shall be subscribed before the first day of March next, that the charter of the said company will expire by limitation and become wholly void—and whereas, should the said charter be thus permitted to expire, it is altogether uncertain whether the same privilege would ever again be granted by the Legislature of Virginia, although, while the charter is in existence, there is every reason to believe that the latter State, true to her general policy, will contribute two-fifths of the amount necessary to complete the work—And whereas it is represented that the citizens of the Valley of Virginia have subscribed two hundred and fifty thousand dollars, which is all that can be anticipated in that direction and that the city of Baltimore is the source from which alone can be procured the amount necessary to secure the charter and to secure also the subscription of the State of Virginia. And, whereas, the importance of the Staunton and Potomac Railroad whether as a new channel of communication between Baltimore and the rich and productive region that it traverses, or as a tributary to the Baltimore and Ohio Railroad, enhancing the value of the latter work, cannot be too highly appreciated by the people of Baltimore—Therefore, *be it Resolved*, That in the opinion of this Board the completion of the Staunton and Potomac Railroad is a matter of the highest consequence to the city of Baltimore, as the certain means of securing an immense trade and travel from the South-West, that will otherwise seek the Atlantic seaboard by other channels.

Resolved, That in the opinion of this Board it especialy concerns all those who are interested in the prosperity and increase of Baltimore, to lend their aid by subscribing to the stock of the Staunton and Potomac Railroad Company, with a view to the preservation of its charter and the completion of the work that it is authorized to make.

Resolved, That a copy of these resolutions be addressed to the Board of trade, representing, as that body does, the interests of the commercial community; and that their aid in obtaining the requisite subscription be most respectfully solicited.

Resolved, That Messrs. Cohen, Patterson, Swan, Donaldson and McKim be a committee to take such measures as may be useful in their judgment to procure the subscription herein referred to, and to the necessary extent.

Resolved, That a copy of these resolutions be published in the newspapers of this city."—[Balt. Gaz. Feb. 8th.]

From the Indiana Farmer.

Almost every day furnishes some new attempt to extend or to modify the internal improvement system of last winter; but it appears all are destined to the same fate. On Tuesday last an attempt of this sort was made, the ultimate object of which was, to change the rout of the railroad from this place to Layfayette, so as not to make Crawfordsville a point, but to run on a direct line to Lafayette.

The friends of the measure contended for it on the score of economy; its opponents used the same argument, urging that if the proposed measure should carry, that then the Albany and Crawfordsville road must be extended to Lafayette to connect with the canal; while upon the present plan the distance was only lengthened some 7 miles, and the one road from Crawfordsville would serve to connect both works with the canal. Several gentlemen took part in the debate; but especially Mr. Longly of Boon, in favor, and Messrs. Curry and Lee, of Montgomery, against the measure. And as above intimated, it failed.

Daniel Yandes has been appointed by and with the advice and consent of the Senate, as a member of the Board or Internal Improvements, *Vice* David Burr, resigned.—Indiana Farmer.]

Michigan Road.—On Wednesday, in the House, a bill providing for an appropriation of $30,000 to the Michigan road,—10,000 north, and 10,000 dollars south of Indianapolis—was considered, spiritedly debated, and finally passed; but on Toursday morning, after a long and animated debate the vote of the preceding day, passing the bill, was reconsidered, and the bill, after some discussion, was re-committed with instructions, from the tenor of which we inferred that no direct appropriation would be made for the improvement of this great thoroughfare of travel at present.—[Indiana Farmer.]

Dunkirk Harbor.—The last Van Buren Times feels somewhat piqued at what we published two weeks ago, about Dunkirk Harbor. Now, we know that facts are stubborn things, and did not expect at the time that the Times could withstand what was contained in Lt. Smith's Report, without at least one struggle, if not more. If the Times does not like the language of the report, it must call on Mr. Smith—he is answerable to an enlightened public, for the language he there makes use of.

The slang of the Times with regard to Dunkirk Harbor, is not worthy of notice. The public it would seem, knows the merits of the two places, better than the editor of the Times; and we are willing to abide by their decision, though the Times is not.—[Dunkirk Beacon.]

From the Harrisburg Intelligencer.

THE GREAT RAILROAD.

The project of extending the railroad from Harrisburg to Sunbury, and from Sunbury to Erie, is one of the noblest, most useful, and practicable of any of the day. *One third of the whole distance is nearly completed.* The whole length from Philadelphia, by the State railroad to Lancaster, the Middletown railroad to Harrisburg, and a railroad by the way of Sunbury and Williamsport to Lake Erie, will not exceed 400 miles. The whole of this distance can be made *without a single inclined plane* where stationary engines must be used, and following the waters of the Susquehanna, the Sinnemahoning, the Tionesta, the Alleghany and the Brokenstraw, three fourths of the whole distance there will not be a plane of any kind of an inclination of 50 feet to the mile. The State railroad from Lancaster to Philadelphia, will have the highest grades upon the whole route. This alone will give the Pennsylvania railroad the advantage over every other railroad from the Atlantic to the Lakes, that has ever, or can be projected. Its length, too, is one fifth less. Besides, it will run through one of the richest mineral regions in the world.—The products and trade of the great Lakes, will not only seek an outlet to the Ocean by this route, but the great iron, as well as the bituminous coal region of the West Branch, and the anthracite mountains and rich agricultural vallies of the Susquehanna will swell the vast stream of wealth, that will pour into the lap of our commercial metropolis, when this great work shall have been completed.

We have lately read the report of the engineer that surveyed, the New-York Railroad, through the Southern counties of that State, from Dunkirk, on Lake Erie, to Tappan, 24 miles from the city of New

York, on the Hudson river. The following is it length:

Western Part,	260 miles.
Eas'ern Part,	222 do.
From the Eastern termination, to the city of New-York,	24 do.
Whole length,	506 miles.

☞ Thus, it will be seen, that the route through Philadelphia, and then across New Jersey, will be nearer to New-York itself, from her own termination, Dunkirk, than on her own railroad, when it is finished.—But this is not all the advantage we have in distance. Dunkirk is about 40 miles further down the Lake, than the town of Erie, and this distance, added to the New-York road, will show, that no passengers from the western States will take the New-York road, when our road is finished,—when Philadelphia can be reached through Pennsylvania, by a route 150 miles shorter, and New-York itself is 50 miles nearer, than on her own contemplated railroad. But even this great saving of distance is not our greatest advantage. The New-York railroad has a number of inclined planes. By the report now lying before us we perceive, that there are eleven planes, with an inclination of 50 feet to the mile. Six p anes with inclinations varying from 50 to 60 feet per mile, and five having inclinations from 50 to 70 feet per mile. Twelve miles have a grade of 70 feet inclination to the mile. Four miles and nearly one half ascending at the rate of 72 feet per mile. Three fourths of a mile, at 100 feet per mile; and more than one mile and a half at 316 feet per mile. The following are only a few of the planes, with their grades, length and distance from Tappan on Hudson river, 24 miles from New-York:

Distance from Hudson river.	Length of the planes.		Inclination per mile.
Miles.	*Miles.*	*Chains.*	*Feet.*
76		278	100
188	5		60
193	5		70
194	1		61
203	7		70
207	3		65
348	4	40	72
349	1	25	67
473	1	60	316

From the Petersburgh Intelligencer.

At a meeting of the Stockholders of the Roanoke, Danville and Junction Railroad Company, convened at Powell's Hotel, in the Town of Petersburgh, on Monday, the 23d day of January, 1837, pursuant to public notice, given by the Commissioners, named for the Town of Danville, in conformity to the provisions of the 4th section of the General Assembly of Virginia, entitled "an Act to incorporate the Roanoke, Danville and Junction Railroad Company," passed the day of 1836.

It appearing to the meeting that 4859 Shares of the Capital Stock have been subscibed—and a majority of said shares being represented by Subscribers present, and by proxy: On motion of Mr. Spooner, Andrew S. Fulton, Esq., was called to the chair, and John D. Townes, appointed Secretary.

A report of the proceeding of the Commissioners, for the Town of Danville, was presented by George Townes, Esq., read, and ordered to be printed.

On motion of Mr. Woodis, the meeting proceeded to the election of a President and five Directors; when Vincent Witcher, Esq., was unanimously elected President, and George Townes, Benjamin W. S. Cabell, and william Linn, of Danville; John Foster, of Evansham, and Wright Southgate, of Norfolk, were duly elected Directors of the Company for 12 months.

On motion, it was resolved, that the President of the Company be allowed the sum of Fifteen hundred Dollars, as a salary for 12 months.

On motion of Mr. Spooner, it was

Resolved, That a committee be appointed to prepare a memorial to be presented to the Legislature of Virginia, asking a subscription by the State to the Stock of the Roanoke, Danville and Junction Railroad Company—and to prepare and report to a future meeting of the Company, such Bye-Laws and Regulations as may be deemed necessary for the government of the Company and its officers. Messrs. Spooner, Branch, G Townes, Garland and Martin, were appointed a committee pursuant to the foregoing resolution.

On motion, it was

Resolved, That the annual meeting of the Company be held in the Town of Danville, on the last Monday in July next.

On motion of Mr. Townes, the meeting adjourned until to-morrow morning, 10 o'clock.

—

Tuesday, January 24, 1837.

The meeting convened pursuant to adjournment.

The Secretary not being present, Mr. Garland was appointed Secretary, *pro tem.*

On motion of Mr. Woodis, it was

Resolved, That the President and Directors be and they are hereby authorised and required to refund to the respective contributors, the several sums advanced by them to defray the expenses attending the experimental survey.

The Committee appointed on yesterday, to prepare a memorial to be submitted to the Legislature, made a report, which was concurred in, and it is ordered that the President of the Company, cause the same to be presented to the Legislature without delay.

On motion of George Townes, Esq., it was

Resolved, That the President and Directors be requested to proceed with all possible despatch to the execution of the work, and all other business necessary to the expedition and successful completion thereof.

Resolved, That these proceedings be signed by the Chairman and Secretary and that the respective Editors of Newspapers published in Norfolk, Petersburg Richmond, Danville, Evansham, and Abingdon be, and they are hereby requested to publish the same.

On motion of Mr. Martin, the meeting adjourned.

A. S. Fulton, Chairman.
J. D. Townes, Secretary.

From the Dunkirk Beacon.

Dunkirk Harbor, etc.—The report of Lieut. Smith, Superintendent of the public works on Lake Erie, will be found in part, below. We give such extracts as relate to Dunkirk, and such other harbors as are in this vicinity. By this report, it appears that Dunkirk is the point fixed upon by the general government, to expend the sum of *one hundred and ninety-four thousand dollars*, for erecting a permanent stone wall nine feet high on the breakwater in front of the harbor. This report gives a broad and comprehensive view of what has long been needed at this harbor; it recommends, second, the construction of a permanent stone wall nine feet high, on the pier at the western entrance into the bay, from the contemplated beacon light, 480 yards running in toward the shore. Third, the construction of a pier 320 yards long, to be sunk in eight feet water, and carried up to two feet above the surface of the water; to be erected on the south side of the eastern channel. Fourth, to add 480 yards crib work to the east end of the breakwater or pier in front of the bay.

There is one feature in the report which we take pleasure in mentioning—it knows no harbor between Buffalo and Erie, except *Dunkirk*. We mention this for the exclusive benefit of our Van Buren neighbors, who we understand, deny the correctness of extracts which have been made from the report, in eastern papers.

Office of Sup. Public Works,
Buffalo, N. Y. September 20, 1836.

Brig. Gen. Gratiot, U. S. Army,
Chief Engineer, Washington, D. C.

Sir:—I have the honor to report, that I assumed the duties of general superintendent of such of the works on the south shore of Lake Erie as are confined to the Engineer Department, by your direction, from the 1st to the 9th August last; my predecessor having, on the last named day, ceased to disburse.

With the remark, applicable alike to every work on this lake, that the appropriations were not received for this year until late in the month of August, and that the season from that time has been such a one as has never before been known, of continued and violent storms, generally from some northwardly direction, with the water of the lake, on an average, at two feet eight inches greater height during the whole season, than it has been in any season for twelve years past, I offer the following report of the progress of the works.

Dunkirk Harbor, New-York.—The progress of this work during the season has consisted in: 1st. The building up to 5 feet in height above the surface of the water, and finishing off 156 feet of the west pier, and 166 feet to the height of 4 feet above the water, making 322 feet. Of the foregoing 20 feet left unfinished last fall was carried away by storms and ice to 3½ feet below the water, and is now rebuilt. This portion of the work is constructed in a depth of ten feet of water, and is 22 feet in width. The

west pier is entirely complete on the present plan. 2d. Building up 200 feet of the west end of the outer pier to the height of 4 feet above the surface of the water. To repair this effectually, it was necessary to cut down and remove, 1 foot below the surface, 140 feet of this work during the season. This is also, now, complete and in good condition. 3d. Filling up with stone, planking, and capping 280 feet of the outer pier left unfinished last fall, the stone having been carried out by the storms and ice during the gales last fall and winter to the depth of 4 feet; this is now finished and in good order. Of this pier, 1,120 feet still remain to be repaired this season. The repairs will consist of filling it up anew with stone heretofore carried away at different heights, covering the whole anew with plank; a repair rendered necessary by the decayed state of the present plank, and the danger of still further injury to the work from the storms. The harbor of Dunkirk has recently been rendered of vastly more importance than heretofore, by the decision of the Hudson and Erie Railroad Company to terminate that great work at this place. It has been found a valuable harbor in the severe and sudden storms to which Lake Erie is liable, and it appears to be of infinite consequence that it should be made permanent. It is, therefore, respectfully recommended, that the necessary steps should be taken the coming year to construct the piers of stone, laid in hydraulic cement above the water, in a manner somewhat similar to the construction of the mole of Buffalo Harbor, and with this view the estimate marked C is respectfully submitted.

Recapitulation of the different sums required for theservice of the works at Dunkirk harbor, New-York, as per estimate.

1. An estimate for fuuds for a stone wall on the breakwater,	$98,981	72
2. An estimate for a stone wall on the western pier,	48,020	50
3. An estimate for the construction of a new pier on the south side of east channel,	14,829	80
4. An estimate for extending the breakwater 480 yards eastward,	22,974	29
5. An estimate for large stone for backing up works,	10,000	00
Total amount required to complete works,	$194,806	31
Amount required for the service of 1837,	$47,784	09
1838,	50,000	00
1839,	50,000	00
1840,	47,022	22
	$194,806	13

DUNKIRK, October 10, 1836.

Respectfully submitted,
By your obedient servant,
THOMAS FORSTER, Superintendent.
Brig. Gen. C. GRATIOT,
Chief Engineer, Washington.

From the Buffalo Daily Commercial Advertiser.

THE CANAL CONVENTION.

This Convention, which aasembled at the Court House yesterday, was creditable both in numbers and character to Western New-York, and an evidence of the deep interest generally prevalent for the speedy completion of the great work it was designed to promote. The doings of an assembly of a character so imposing, cannot but arrest the attention of the Legislature, and exert a salutary influence in prosecuting to completion, the great work of enlarging the Erie Canal at a much earlier day than was contemplated at the adoption of the project.

The Convention, at 11 o'clock, A. M. was called to order by the Hon. Jonathan Childs, and on motion James Seymour, of this city, was appointed temporarily to the Chair, and Washington Hunt, Esq. of Lockport, and John L. Kimberly, of Buffalo, were appointed temporary Secretaries. At this point of the proceedings Mr. O'Reily rose and stated in behalf of the citizens of this city, that the Convention was not called to subserve any other project than that indicated in the call for the Convention. This was warmly responded to, by a gentleman from Buffalo, on behalf of that delegation, and by Jesse Hawley, on the part of the Niagara delegation.

The counties was then called when it appeared that delegates were in attendance from Erie, Niagara, Orleans, Monroe, Wayne, Livingston, Alleghany, Seneca, and Cayuga counties. On motion, it was resolved, that the delegates from the several counties designate three from each delegation to nominate officers for the convention.

After a short retirement, the committee returned and reported the Hon. NATHAN DAYTON, of Niagara, as President, and Josiah Trowbridge, of Erie, James Seymour, of Monroe, Jesse Clark, of Seneca, and Allen Ayrault, of Livingston, as Vice Presidents. The committee also made choice of S. G. Andrews, of Monroe, James L. Barton, of Buffalo, Theron S. Strong, of Palmyra, and A. H. McKinstry, of Albion, as Secretaries.

On motion it was then resolved, that a committee of six be appointed to report resolutions for the consideration of the convention. Whereupon Henry O'Reilly of Rochester, C. Turner of Niagara, R. W. Haskins, of Erie, A. H. Bennett, of Livingston, Geo. W. Cuyler, of Wayne, and Theodore Rapple, of Cayuga, were appointed such committee. The convention then adjourned till 3 o'clock, P. M.

The convention met pursuant to adjournment when it was ascertained that J. Clark, one of the persons designated as Vice President, was not present, and a motion made that Jesse Hawley, Esq. of Niagara, be chosen in his stead, which was unanimously agreed to.

The committee having returned, Orasmus Turner of Lockport read the preamble adopted by the committee. It set forth in an eloquent and happy manner the great importance of the speedy completion of the enlarged canal—important as a means of facilitating our own business, but doubly so as offering the only alternative for the retention of the already great and rapidly augmenting commerce of the illimitable West.

Mr. Hart, of Wayne, who had previously submitted a resolution connecting the engagement of the Genessee Valley Canal with that of the Erie Canal, and which, with the various motions growing out of it, had been laid on the table, seemed unwilling to let it rest there, as it was connected with a speech, of which he seemed in pain to be delivered. The convention, therefore, unanimously assented to his proceeding. He commenced by adverting to the eve of internal improvement in the state of New-York—the completion of the main trunk, the Erie Canal, and the various lateral branches to which that has given birth—vindicated the policy of their construction, although a yearly tax on the main channel. Having thus cleared the way, he came to his favorite project, which was none other than giving the Erie canal and that of the Genesee Valley a like capacity.

He denominated the proposed canal an important leg in the triangle—proceeded to show that without such capacity the canal would never become a source of revenue, but with it, and extended by an improvement of the Allegany river, it would open to Rochester the extensive trade of the Ohio valley, and become the favorite channel for the transit of a great trade. In connection with the subject he adverted to the accumulation of ice in Buffalo harbor, as opposing an impediment to early navigation, alledging that the Genesee Valley canal would obviate this difficulty. After insisting on the propriety of the resolution which had been the occasion of his remarks, and adding the hope that it would yet find favor with the convention, he resumed his seat.

After the reading of the preamble was concluded, Mr. O'Reily, chairman of the committee, reported six resolutions, happily embodying the necessity of the work and the arguments in favor of its speedy prosecution. The preamble and resolutions having been thus presented to the meeting, it was moved and carried that the the report of the committee be accepted.

If the numerous assemblage of people early in the day gave satisfactory evidence that the importance of the convention was appreciated, the spirit evinced on the question of the adoption of the resolutions as they were severally proposed, would have rendered assurance doubly sure. The first and second wery adopted without discussion, but on the third being proposed, E. Darwin Smith, Esq. of this city, rose and made some stirring remarks on the subjects embraced in the resolution. He was followed by Messrs. Hawley and Ketchum, of Buffalo, in a strain of stirring eloquence. Also, by Judge Hunt, of Niagara, Judge Cantine, of Orleans, and General Brooks and Mr. Bryan, of Livingston, all of whom spoke with that feeling and efficiency which a warm zeal and a just cause always inspire. The speakers were severally cheered by a crowded assembly of eager listeners. Several other gentlemen, whose names were not known to us, addressed the meeting with effect.

The discussion was arrested by a motion to adjourn till 9 o'clock the following day, but was subsequently amended to seven o'clock in the evening, to which time the convention adjourned in the greatest harmony.

SEVEN O'CLOCK.—The convention met according to adjournment, and proceeded to adopt the remaining resolutions. Their

propriety was enforced by pertinent remarks from J. H. Bench, H. L. Stevens, Esq., E. Darwin Smith, Jesse Hawley, Esq., Judge Hunt and O. Hastings, Esq., as also by other gentlemen whose names were not distinctly heard. The resolutions were adopted by acclamation.

☞ Some caustic reflections were made on the apathy evinced by the cities of New-York, Albany and Troy in relation to the proceedings had here preliminary to the present convention, and the fact stated ☜ that of all the journals in New-York none save the Journal of Commerce deigned them a passing allusion. Yet with all these discouragements to encounter, Western New-York is determined to press this matter on the attention of the Legislature with all the moral weight possessed by her enterprising and indefatigable population. The remarks on the resolutions having been concluded, the convention adjourned till to-day at 9 o'clock A. M.

THURSDAY, Jan. 19.

The convention re-assembled this morning pursuant to an adjournment and was called to order by the chair.

Jesse Hawley, Esq. of Lockport, presented a resolution complaining of the apathy evinced by the city of New-York, in relation to the enlargement of the Erie canal, which, having been read, was, at the instance of the mover, laid on the table.

Judge Hunt of Lockport, submitted a resolution designated the appointing of a committee for the purpose of laying the proceedings of the convention before the Chamber of Commerce for the city of New-York, which was also laid on the table.

The unfinished business of the previous evening being called for, a resolution was read by Mr. O'Reilly setting forth the advantages which the speedy completion of this work offered.

Mr. Hastings, of Rochester, objected to the resolution as too minute and diffusive in character, and more appropriate for embodiment in a memorial.

Mr. Gay concurred in the same views.

Mr. Hart thought the resolution too conjectural—the simple facts were all that were necessary to ensure the subject a profound consideration from the public.

Mr. Hawley said the object of a resolution was to embody sentiments, not facts. On motion, the resolution was read, when its structure was objected to by Mr. Ketchum, who thought it more fitting a memorial. After considerable informal discussion the resolution was laid on the table.

Mr. O'Reilly called the attention of the convention on the subject which convened it, and proceeded to deprecate the introduction of any extraneous matter, when he was called to order and sat down, but on motion of Judge Hunt, of Lockport, was allowed to proceed, which he did by a recapitulation of the reasons why no other subject should come before the convention than that indicated in the call.

* * * *

The reading of the preamble being called for, the question was on its adoption, when Mr. Hastings objected to it as a preamble, but was willing to adopt it as an address.

Mr. Hawley, of Buffalo, objected to changing the name, and after having concluded his remarks the preamble was adopted, as also the resolution in connection.

A gentleman from Buffalo rose, and by permission of the convention proceeded to reply in a playful manner to the "*ice*" argument of the gentleman from Wayne. He stated that Buffalo had indeed much ice, but, bountifully as she was supplied with that article, it so happened that they contrived to "*use it up*" by the time the canal was ready for navigation in the spring. But should icebergs so accumulate at the harbor as to deny egress therefrom, the people would uncomplaingly submit to the fetters that enchained them, and settle down to the occupation of "*seal catching!*" He further stated that Buffalo felt no hostility to the Genesee Valley Canal, and that the repugnance of the Buffalo delegation to connecting it with the Erie canal, arose solely from their want of authority to act on it.

The convention proceeded to the business more immediately connected with the objects of it, and after an extended discussion, the Chair was authorised to appoint a central executive committee to carry into effect the proceedings of the convention. and to transact such other business in relation thereto as may be deemed advisable.

A memorial was reported and accepted and placed in the hands of the committee.

The Chair announced the following gentlemen residents of this city as the central executive committee:

Henry O'Reilly, E. Darwin Smith, G. Andrews, Thos. H. Rochester, Jonathan Child, James Seymour and Horace Gay.

The following county committees were announced by the respective delegations.

Erie County—W. A Mosely, R. W. Haskins, Seth C. Hawley, J. M. Kimberly and Jas. L. Barton.

Niagara County—G. H. Boughton, W. H. Hunt, E. Ransom, C. Turner and Jesse Hawley.

Livingston County—A. Ayrault, A. A. Bennet, C. H. Bryan, Micah Brooks, and Charles Colt.

Genesee County—H. J. Redfield, D. E. Evans, T. Cary, G. W. Lay and James Brisbane.

Orleans County—Hugh McKurdy, A. B. Mills, Alexas Ward, A. H. Cole and A. Nickoson.

Wayne County—Richard Wood, E. Blackman, J. Andrews, J. Hemmingway, and A. Purdy.

The central executive committee was charged with the duties of a county committee so far as Monroe county was concerned. The business of the convention having been thus disposed of, Dr. Brown of this city moved a resolution tendering the thanks of of the convention to the President for the manner in which he had discharged the duties of the station assigned him.

The resolution was unanimously adopted, whereupon the President, in a neat, brief and pertinet address signified his appreciation of the honor done him by the convention.

A resolution of a similar character was presented in behalf of the other officers of the convention and adopted by a like unanimity.

Mr. O'Reilly then presented the thaks of the citizens of Monroe to the several counties represented, and to the delegates therefrom, for the promptness with which the call for a convention had been responded to, and expressed the hope that the citizens of Western New-York would be always found ready to co-operate with the like unanimity in the promotion.

The convention then adjourned *sine die*.

OFFICIAL.

ADJUTANT GENERAL'S OFFICE,
Washington, Feb. 3, 1837.

GENERAL ORDER, NO. 2.

I.—The Secretary of War, *ad interim*, has received the following resolution from the Senate of the United States:

Resolved, That the Secretary of War be requested to cause an examination to be made by a board of officers, into the improvements in fire-arms made by Hall, Cochran, Colt, and the Baron Hackett; and that the general results be presented to the Senate in tabular statements, showing the advantages of each in all important military points of view, and especially as to—

1. The celerity of fire.
2. The extent of the recoil.
3. The efficiency of the fire.
4. The inconvenience from heated barrel in rapid firing.
5. The capacity of being used as a rifle.
6. The simplicity and cheapness of construction.
7. Durability.
8. Saving of ammunition and appendages.
9. The number of charges which may be carried by an infantry soldier.
10. The advantages when used against a charge of cavalry.
11. The advantages when used by cavalry.

II.—In conformity with the provisions of the foregoing resolution, the Secretary directs that a board, to be composed of the following officers, to wit:

Brev. Brig. Gen. J. R. Fenwick, Colonel of the 4th Artillery;
Brev. Brig. Gen. N. Towson, Paymaster General;
Col. G. Croghan, Inspector General;
Brev. Lt. Col. Worth, Ordnance;
Lt. Col. Wainewright, Marine Corps;
Lt. Col. Talcott, Ordnance;
Capt. B. Huger, Ordnance;

be assembled at the Washington Arsenal on Monday, the 20th of February instant, at 11 o'clock, for the purpose of making a thorough examination of the improvements in fire-arms made by Hall, Colt, Cochran, and the Baron Hackett, in the manner and mode specified in the resolution.

III. The board will report the general results, for the information of the Secretary of War, in tabular form, showing the utility of each fire-arm in all important military points of view, as required by the resolution; and will also report such further information on this subject as they may be able to communicate, with their opinion on the relative advantages of the several improvements submitted to their examination.

First Lieut. J. N. Macomb, of the Artillery, and Aid-de-camp, will record the proceedings of the board.

By order,

ROGER JONES,
Adjutant Gen. of the Army.

Miscellaneous.

About a year since an article was published in this Journal on the subject of the employment of zinc for roofs, by Dr. L. D. Gale, and in this article it may be remembered that several serious objections were urged against the employment of that material. The following article from the American Journal of Science and Arts—January 1837, will be found to give an entirely different view of the subject.

It is highly important that the merits of the case should be well ascertained before opinion is made up. Believing that the experiment detailed by Dr. Gale could not give erroneous results, we had decided in our own minds. It appears however, that further experiment is necessary.

ON ZINC, AS A COVERING FOR BUILDINGS; IN A LETTER FROM PROF. A. CASWELL, TO MESSRS. CROCKER, BROTHERS & CO.

You sometime ago requested me to examine an article on *Zinc, as a roofing material*, published by Dr. Gale of New-York, in a late number of the Mechanics' Magazine. I regret that it has not been in my power to give your request earlier attention.

The remarks of Dr. G., which were copied by several papers at the time, were fitted, in your opinion, to prejudice the public mind unjustly upon a subject of great importance. He discourages the use of zinc as a roofing material, upon several distinct accounts, the principal of which, are the following.

1. The difficulty of making the roof tight.
2. The deterioration of the water which falls from it.
3. The comparatively small resistance which it offers to the progress of fire.

1. As to the first of these objections, the brittleness of the metal and its great expansion from heat are adduced, to show that a roof cannot be made sufficiently tight.—Zinc in the *unwrought* state is well known to be very brittle, and there may be in the market *rolled* or *sheet* zinc of a bad quality. But no one need be deceived on this point, since nothing is easier than to test its flexibility. Sheet zinc which will bear to be doubled and hammered down without any appearance of fracture in the bend, may be used as a covering for buildings, without the least fear of leakaga. Such is ths fact with regard to sheet zinc which I have examined from your manufactory; and such, I am assured, is the fact with regard to foreign zinc from the best manufactories. But any detailed examination of the brittleness and expansion of zinc, so far as this question is concerned, is entirely obviated by the well ascertained fact, that there is no practica difficulty in making a zinc roof *perfectly tight*. The numerous certificates which you have submitted to my examination, from most respectable gentlemen, who have made the experiment, place the subject beyond all reasonable doubt. A zinc roof may as easily be made tight as any other whatever.

2. The second objection respects the deterioration of the water which falls from the roof. This consideration is particularly important to all those who are in the habit of using cistern water for culinary and other domestic purposes.

It is alleged that a *poisonous* suboxide of zinc is dissolved in the water, which renders it unfit for *cooking*, and impairs its proprieties for *washing*. On this point I have consulted the ablest modern writers on chemistry, Brande, Turner, Thomson, Berzelius, and others. The oxides of zinc seem not to have been much studied. The principal one known, and perhaps the only one certainly known, is the white oxide, (sometimes called the flowers of zinc,) which is quite *insoluble* in water, and hence could not vitiate its proprieties. Berzelius thinks there are two others, the suboxide and the superoxide.

The *suboxide* is the gray coating formed on the surface of zinc by exposure to the weather, and this is the substance which, it is said, is dissolved and mixed with the water, which falls from a zinc roof, thereby impregnating it with deleterious properties. This opiuion, so far as I can learn, is unsupported by any writer on chemistry. Turner says, "zinc undergoes little change by the action of air and moisture." Aikin's Chemical Dictionary, a work of merit and authority, says, "the action of the air upon zinc, at the common temperature, is very slight; it acquires a very thin superficial coating of gray oxide, which adheres to the metal and *prevents any further change.*" The statement of Thomson is, that zinc, when exposed to the air, soon loses its lustre, but "*scarcely undergoes any other change.*"—The account given by Berzelius, the ablest chemist of the age, is very explicit and much to the point. He says, "this oxide is formed on the surface of zinc which remains a long time exposed to the contact of the air. It has a dark gray color when moistened, but by drying becomes of a light gray. Ordinarily it forms a thin crust on the surface, which neither *increases* nor *experiences any change in the air*; but acquires great hardness, and resists, better than the metal itself, the mechanical and chemical action of other bodies. A piece of zinc sufficiently suboxidized at the surface, dissolves with *extreme slowness in the acids, and only at the boiling temperature.*

Such are the opinions of chemists, and particularly of Berzelius, whose unrivalled skill and accuracy in chemical analysis have been the admiration of all cotemporary chemists.

The opinion of Dr. G., is considerably at variance with those now adduced. I think he has not stated very fully, and certainly not very satisfactorily, the reasons on which it is founded. He mentions, however, as a proof that this suboxide is dissolved in water from zinc roofs, that if it is suffered to stand for some time exposed to the air, the suboxide gradually takes oxygen from the atmosphere, and is thus converted into the *insoluble* white oxide before mentioned, and is then precipitated in the form of a white powder. To test its purity by this method, I have kept water from a zinc roof exposed in clean glass vessels for several days, without any, the slightest appearance of a precipitate, or even a pellicle upon the surface. And what is still better as a test, I have kept it for several days in closed bottles with oxygen gas, and subjected it to frequent agitation, without the least appearance of a precipitate, or any diminution of transparency. I must think, therefore, that if such water contains the suboxide of zinc, its presence is not to be detected in this way.

That the quantity of zinc dissolved in water *must be exceedingly small*, is obvious from the following consideration. A sheet not more than the fortieth of an inch in thickness, would probably last at least half a century, on the roof of a building. Indeed, for any thing we know as to the *rate* of its oxidation, it might last for centuries. The concurrent opinion of chemists, and this confirmed by observation and experiment, so far as these have extended, is, that after the gray oxide is once formed, any further change takes place *scarcely at all*, or with *extreme slowness*. But on the supposition that it would last only fifty years, the whole quantity of rain which falls in the course of a year, or about three feet on the level, would dissolve the *two thousandth part* of an inch in thickness of zinc. This, to produce any appreciable effect, must be one of the most virulent of poisons, equal at least to prussic acid. But so far from being an active poison, it remains to be shown that it is poisonous at all, even if a minute portion of it did mingle with the water. The white oxide of zinc is not poisonous, and the inference seems to be gratuitous that this is so.

It is due no less to the public than yourselves, that the truth upon this subject should be known and promulgated. I am quite satisfied, for one, that we are not in the least danger of being poisoned by the use of water from zinc roofs. The portions of this water which I have examined, could not be distinguished from pure river water by any test that I have been able to apply to it. I feel myself warranted, therefore, in the conclusion, that *it has suffered no deterioration whatever from the zinc.*

3. A third objection is that zinc affords inadequate protection against fire.

This objection is based upon the fact that zinc melts at a low temperature; and in case of fusion, leaves the wood work of the building unprotected. This objection is rather specious than real. Zinc melts at the temperature of about 700° Fahr. or a little below red heat. Whenever, therefore, the heat from adjacent buildings is any thing less than that of redness, zinc would afford as complete protection as copper or iron.—When the heat has reached the melting point of zinc, which it seldom would do except in the most compact parts of cities, very little confidence could be placed in the protection of iron or copper. The dry wood work of the roof, under a covering of red hot iron, with air enough for combustion circulating through openings and crevices, would soon be in flames; and when once in flames it would be extremely difficult to extinguish it by the application of water. It would be applied with great disadvantage to the under side of the roof, and almost to no purpose at all upon the top. If therefore the heat, in

any case, should become so intense as to melt zinc the probability of protection from iron or copper will be but small.

Complete protection against fire is perhaps unattainable; at least we can never be sure we have attained it. In the progress of the arts, great improvements no doubt will be made in the mode of defence against the attacks of this destroyer. I am not aware that the following construction for a roof has ever been tried. For cheapness, tightness, durability and resistance to fire, it seems to be well deserving the attention of builders. Let the rough boards of the roof, (and the rougher the better,) be covered with a thick coating of common lime mortar, then lay down the *ribs*, if I may so call them, for the zinc plates,—then cover the whole with zinc, according to the most approved method of applying it. Such a roof would be in no danger of leakage, unless the water accumulated upon it so as to stand above the ribs, in which case no roof would be tight unless it were corked or soldered throughout. This covering, if I am rightly informed, would be nearly as cheap as slate—quite as cheap as tin, cheaper than iron, and more than three times cheaper than copper; and would at the same time resist fire much better than either of them. A heat that would melt down the copper and iron, would of course, melt the zinc, but would leave the mortar uninjured. The peculiar advantage of the mortar is, that it is infusible except at a very high temperature, while the closeness with which it adheres to the wood work is such as to exclude the air and thus prevent combustion. If the mortar should be kept at a red heat for some length of time, the wood beneath it would be *charred*, but could hardly be *burnt*. In case of fusion the zinc might be replaced without injury to the mortar. I know of no construction for a roof that would be more completely fire proof than this.

Such are my views on the subject to which you called my attention. If they shall serve in any measure, to remove prejudice, and allay unfounded apprehensions on a subject of great and growing importance to the public, it will afford me much pleasure.

Brown University, October 1, 1836.

From the Journal of the American Institute.

COAL.

Messrs. Editors,—This community, and, in fact, a large part of the country, are alive to the high price of coal. Winter is gathering upon them with increasing sternness; and although thus far not as frightful as the last, the dread that the worst is still to come, agitates and alarms. This condition of the public mind is calculated to bring forth advisers in scores; because it is a time when they will be listened to. Some favorite panacea becomes popular. The people, like suffering patients, are sure that they feel distress, and, like them, they cannot be satisfied until they have swallowed the popular remedy, or been bled or steamed, as the fashion at the time may dictate.

The sovereign specific—the grand catholicon—which will make plenty, and, of course cheapness, is free trade;—take off all duties, and open your ports to the whole world and all will be well. Petitions to Congress for this purpose have been circulated, and thousands have signed in the full belief that they were contributing thereby to mitigate the rigors of our severe winters, and bring our shivering inhabitants into a milder zone. I have been repeatedly accosted by those engaged in carrying around these petitions to lend my name—to inform Congress that the weather is cold, and that fuel is high, and humbly pray them to pass laws to make us warm:—not exactly to legislate us into a milder climate, but to legislate down the price of coal, by taking off the duty, about $2 per chaldron, which is required to be paid on imported coal. Not having a particle of confidence in this prescription, I have sought for reasons from those who take such interest as to go from house to house and store to store, to beg signatures.

I have desired them to name an instance, when the means of a home supply existed, where a reduction of duties effected a reduction of prices. I desired them to examine the history of our tariff, and see for themselves whether reduced prices had not been the invariable effect of high protecting duties. I instanced to them cottons, leather, cabinet wares, hats, &c., which were among the earliest articles protected by high duties, and which duties have been regularly continued down to this; all these are now so abundant and cheap, that we are deriving a good profit while we undersell them in foreign markets to those very foreigners from whom formerly, before high duties were imposed, we purchased our supplies. Not a free trade coal advocate has been found to deny these facts.

I have not, however, been so fortunate as to shake the faith of a single man. It is opposed to their theory; they are suffering, and, like the afflicted patients, unwilling to submit to a gradual, but certain cure, they yield to the persuasions of the empiric, and shut their eyes against facts and experience. Some have said that coal is an exception; that all that is wanted is to break down the coal monopolizers, extortioners and grinders; that coal is necessary for the poor. I ask, is not bread, too, a necessary? Do not flour dealers monopolize? It has been stated, that there is a confederacy of monopolists extending from New-York to Buffalo; and it is probably truly stated, that a more universal scarcity in bread stuffs exist from the short crops of the last season, than has prevailed at any time within the last fifteen years.

The duty on foreign wheat is twenty-five cents per bushel. Are there not stronger reasons for the repeal of this duty, than even the duty on coal? Are the flour monopolists less obdurate? Is their combination more limited, or less effective? Is the future supply less certain? Let those who doubt explore the coal regions of the west, and they will find a supply, not thousands of feet below the surface, as in England, but forming the very surface itself, and of sufficient depth for the supply of not only America, but all Europe, for centuries to come. That the supply is inexhaustible, no one will deny. From the best calculations, it may under ordinary circumstances, be afforded in our city at less than half its present price.

The supply of wheat cannot be relied on with the same certainty. Bad crops may occur, and reduce production particular years greatly below the common average, as they did the last year. No deficiency can happen in our coal beds. Why then these exorbitant prices? Coal has suddenly superseded other fuel, not only in our populous cities, but in the country—for manufactures, for steamboats, as well as to warm our houses. Just as our forests had disappeared, our coal beds—those exhaustless magazines of fuel—began to be known.

It is but a short period since a few samples were brought here for exhibition. The last year there was brought to market, from three mines in a single State, 556,935 tons; and for the coming year, preparation for its supply are making upon a larger scale than ever. The ratio of increase from these mines alone, is such as must soon fully equal the demand, and new mines are constantly opening; and the competition, so highly stimulated by ready sales and high prices, must inevitably and speedily reduce the article to its minimum price, unless that competition is checked by indiscreet legislation. All that is required, is for more capital to be turned into the coal trade at home

If the facilities for the importation of foreign coal are increased by the repeal of the duty, the inducement for our capitalists to make extensive arrangements for supplying our market the next year is clearly lessened—probably to a tenfold greater amount than the increased foreign importation. The foreign importation is also calculated to derange prices. This consideration, in all probability, would influence the capitalist to withhold the employment of his money beyond what it ought to be invested.

The foreign supply, under any circumstances, will be but a drop in the bucket, when compared with our consumption. The foreign importations of last year were only 14,453 tons. If that amount were imported for forty years in succession, it would but a trifle exceed the amount procured the last year from the three mines I have already referred to. If the repeal of the duty were to be doubled, the foreign supply would amount only to a fraction, compared with the probable home supply of the coming year.

I defy those who desire the repeal of the duty on coal, to name a reason which does not, in full force, apply to wheat, and flour, and potatoes. The present prices of these latter articles, beyond the average of former prices, is quite equal to those of coal. The duty, in proportion to present prices, is as great; and the possibility of a real scarcity, from short crops, may happen to wheat, flour and potatoes, but never can to coal.

The quantity of coal brought to market for several years past, has doubled every three years. Our population requires about twenty years to double. The article is, therefore, increasing more than six times as fast as the consumers. Under these circumstances, we have nothing to do but to give competition full play, and monopoly soon will get its quietus.

Suppose we admit, because coal is a necessary, and the price is high, that the duty ought to be repealed. The same reason will apply to every other necessary. We must carry the principle through, or stand charged with partiality; and in years of plenty, our markets would be glutted with the agri-

cultural products of Europe, and our farmers made the sufferers. Motions and petitions would be offered in Congress to repeal the duties on other articles, and our whole social system would be disturbed and deranged. Pennsylvania would not be peaceable if, without a good reason, her great staple should be made an exception. Our whole protective policy must be demolished. To me it is folly to *endeavor* by a repeal of duties, to tempt our citizens to send their money three thousand miles, and employ foreigners to dig coal from the deep bowels of old England, instead of using it at home in rewarding our own industry, and by its circulation enriching our own people. It would be much sounder political economy to give bounties to encourage its exportation, and by these means break down the monopoly so loudly complained of. CLINTON.

That the price of coal will be regulated by supply and demand, will not be denied. The question then arises, will the supply be increased or diminished, by the repeal of the duty on foreign coal? We believe it will be diminished. With the coal dealers, who fully understand the subject, it will have no effect; but some sensitive capitalists will, no doubt, be influenced to withold their money, which they might otherwise employ in the coal business themselves, or loan to others disposed to carry it on. The whole quantity that, under any circumstances, will, be imported, must be so small, that comparatively a very little effect on our coal operations will more than overbalance the increase from importation, arising from a repeal of the duty. The consequence will be, that coal will bear a higher price than if the duty is continued. And we are told, that some of the most intelligent coal dealers are perfectly willing for the repeal, and laugh at those who think by such means to affect their trade. In 1820, only 365 tons were brought to market from all the Pennsylvania mines. In 1835, 556,935 tons. Fifteen years, therefore, had increased the quantity fifteen hundred and twenty-five times. No monopoly, if the business is let alone, can long withstand the accumulating supply.

Our correspondent has overlooked a very important consideration which has helped to sustain coal the present season. The severity of the last winter caused an extra consumption, which has been computed at fifty per cent. Great numbers, to guard against extortionate prices, obtained their winter's supply the last fall, contrary to their practice in former years. There is not, therefore, exhibited in the coal yards the quantity which, it would seem, might be required. Instead of being there as formerly, and in greater abundance, it is in the vaults of individuals. We believe at this moment the aggregate of coal in the yards and private vaults, will exceed the winter's consumption—especially if the winter continues as favorable as it has commenced.

Some have been alarmed because the coal mines have been alleged to be in a few hands who have it in their power to perpetuate a monopoly. A very little knowledge of our country would satisfy them that a company might as well monopolize the land as the coal. As our correspondent says, new mines are constantly making their appearance; and the positive indications of others are abundantly sufficient to quiet all apprehensions from monopoly. In no one thing has Providence been more bountiful to the United States, than in the article of coal. We may as well alarm ourselves at combinations to monopolize water or air. If our members of Congress, who are so distressed about the poor, will substitute for their repeal bill a bill for the appropriation of a sum equal to what the debate will cost, if it is entered upon—for the purpose of getting coal, to be sold to the poor at a fair price, they will manifest more sense, without diminishing at all the claims for our confidence in their sincerity.

The idea of those who would repeal the coal duty, to help relieve us from the admitted evils of our surplus revenue, will pardon us if we find their proposed remedy bordering on the ludicrous, inasmuch as the revenue from that source has not, in years past, averaged forty thousand dollars per annum!

If a proposition should be made to empty one of our lakes with ladels, it would not be more ridiculous. The time expended by Congress in hearing a dozen long-winded speeches, calculating the ordinary per diem cost, will operate much more effectually in this reduction, and would indeed afford the only argument we have ever heard in favor of the everlasting speeches, fashionable in the national school of rhetoric at Washington.

We will sum up what we have to say. Let the consumers of coal, eschew all petitions, keep up their courage, and be of good cheer, exercise rigid economy in the use of coal this winter, and we have no doubt but that the coming spring, the monopolists of coal will be sufficiently punished by a surplus that must remain a burthen to them until another season. The report on the Morris Canal, published in a former number, a document made up with great care, affords us the cheering information that by means of their canal, anthracite coal may be afforded for $3 66 per ton, and bituminous coal at $4 56—delivered in the city of New-York. As sure as cause and effect follow each other, the price must be soon reduced so as to afford to those engaged in it no more than a bare reasonable profit.

From the Journal of the American Institute we take the following article on an interesting subject.

The following extracts from a correspondence between Mr. Durant, of Jersey City, and a well known friend of domestic industry, has been obligingly furnished us for publication. We think it will particularly interest our silk-growing readers.

NEW-YORK, Nov. 28, 1836.

SIR,—You will recollect suggesting to me last summer, that you was engaged in experiments to produce two or more crops of silk worms in one season. If this could be effected, it is evident the quantity of silk might be greatly augmented in our country. It is not necessary to dwell on the importance of experiments for this purpose, when we know that fifteen or twenty millions of dollars of our hard earnings are every year drained off into foreign countries, for silks which we consume. Fifty thousand bushels of wheat, say one hundred thousand dollars value, is sufficient to put our "*let alone*," or "*free trade*" advocates almost into convulsions, while their nerves are as calm as "a summer's sea" under a full knowledge that more than one hundred and fifty thousand times that amount in silk was imported last year.—But not to dwell on the absurdities of this misnomer, free trade, (which I trust our farmers, who are intended to be entrapped, will perfectly understand,) I will proceed directly to my object, which is to ask from you a detailed statement of your experiments the last season, in producing two or more crops of the silk worm.

Experiments for a similar purpose are making in France. The eggs have been kept from hatching in ice houses, until the time when the hatching process is to be commenced. Experiments made by keeping the eggs in a cellar, where the variation of temperature was from six to nine and a half degrees, were unsuccessful, being, as expressed, too great to keep the living principle dormant.

I am one who fully believe that we are, in a few years, to go ahead of all other countries in producing this commodity—a commodity which must be invaluable, in helping to a favorable balance in trade, as, like specie, it will exchange in any market in the world. Let the ingenuity and tact of our country be brought to bear on its production, and there can be no mistake. But our silk culturists should have early and accurate details of all important experiments made by each other.

Yours, respectfully.

MR. CHARLES F. DURANT.

JERSEY CITY, Nov. 30, 1836.

SIR,—Your letter, soliciting a detailed statement of my experiments the past season to produce two or more crops of the silk worm, is before me.

I agree with you in the opinion therein expressed, that "the silk culturists should have early and accurate information of all important experiments made by each other," though I doubt whether much benefit is derived from a publication of the crude essays and mere approximation to some desirable result in physical science. Such is the state of the experiments to which you allude; with the object only partially accomplished, I have sanguine hopes of ultimate success: and yet I fear it would tire your own and readers' patience, to hear a recital of all the reasons that support these hopes, or the causes which have operated to prevent the success of the entire series of experiments

The desired object, as I remarked to you, was a succession of worms, from the first opening of the leaf in spring until it can no longer afford that nourishing matter so essential to the life and production of the worm. This, in the latitude of 40°, would embrace a period of about five months, say from May to October, and would permit nearly four successive crops to occupy the same shelves, allowing forty two days for the feeding or first state of existence, which, I think, will be the average duration, with the temperature of this latitude.

Seven successive crops, in this period of time, may occupy the same shelves, if for the first twenty days in the existence o each, they could be fed on a shelf specially appropriated for that purpose. This, I think, should always be done; for, at this age, they do not occupy one hundredth part of the space which they require when winding, and consequently, there must result by this mode, a great saving of room and labor to feed them.

By this method, I fed two crops on one frame the present season. They were both from eggs of 1835. The eggs of the first crop were kept uncovered the entire season, where they were deposited by the moth, at my residence in this place, exposed to York Bay and the sea air—the sash of one window lowered three inches, to admit at all times the temperature of the season; and, notwithstanding the extreme cold of last winter, every fecundated egg was hatched from the 7th to the 9th of May, before trees in the open ground had put forth leaves.

I had anticipated this result, and in autumn covered with sea-weed and bass matting a nursery of young trees in the garden. On these the leaves began to appear as early as the 17th of April, and by the 9th of May furnished abundant food for the crop, until they could be supplied from trees in the open grounds. They completed the first state of existence from the 17th to the 23d of June. The cocoons were large, and, with a few exceptions, perfectly formed. With a mere theoretical knowledge of the process, I reeled them without difficulty; and some sewing silk, which I made from the same stock, was judged by connoisseurs equal to the best imported from Italy. You saw specimens of the whole at the last Fair of the Institute, and I think you will agree with me, that the result of the experiment will warrant the assertion, that *silk worm eggs can be preserved uninjured through our coldest winters, and silk of a good quality produced without artificial heat.*

The second crop was from eggs of the same year as the first, and produced by *retarding* the process of nature. With this view, the whole experiment was planned and commenced as far back as the second state of existence, by enclosing the cocoons in a box, to shut out the light. They were then removed to the cellar, where the temperature was lower than the room in which they passed the first state. This kept the chrysalis back seven days longer than those in the feeding room. As soon as they attained the winged or perfect state, I separated the moths, to prevent copulation, till the end of six days, which is a further gain of four days. Most of the eggs were fecundated, as very few were deposited previous to copulation. The box was kept closed, and removed to the room previously described, which exposed the eggs to the same temperature and treatment as those for the first, except the exclusion of light, and removed to the cellar again in March, to prevent the temperature rising above 55 Fahrenheit. From the 15th of May, I opened the box a few minutes each day, to observe with a microscope the progress of the embryo worms, which had advanced so far on the 21st May, that I feared injury from the humid atmosphere of the cellar, and removed them to the feeding room. On the morning of the 30th, a few worms had escaped from the eggs; and, judging it imprudent to keep them longer in embryo, I placed them on a sheet of paper, exposed to the direct solar rays through the window. Every fecundated egg passed to the first state by the evening of the same day. They were in number about four thousand, apparently healthy and vigorous.

The first crop was now twenty-two days old, and occupying the frame on which they continued to be fed, until the winding of the cocoons, which was accomplished by the 21st of June, when they were removed, to give place to the second crop, which were now twenty-two days old, and so small, that up to this time, the four thousand were fed on two sheets of paper. On the 15th of July, most of the second crop had finished winding. The cocoons were generally small and imperfect, though a few among them were nearly equal in size and perfection to the first.

The probable cause of this deficiency in size and quality of the cocoons, can be traced to so many parts of the experiment, that a description of all would require more time than I can at present devote. The dampness of the cellar probably contributed largely, as *water*, in all its forms, whether in bulk, dew, or vapor, is a *bane* to the silk worm. In some instances, protracted rains obliged me to pick leaves in a wet state, and, though I dried them between cloths, probably particles of water still adhered to them. During the latter part of their feeding, the hydrometer indicated a humid atmosphere, and it was at times so cold, that Fahrenheit fell below 60°—an injurious effect, which I could not counteract, as I had resolved to dispense with artificial heat. That these were the most immediate causes, I infer from the fact, that a few of the cocoons were large and perfectly formed.

You remark, that "experiments made in France, by keeping the eggs in a cellar where the variation of temperature was from six to nine and a half degrees, were unsuccessful, being, as expressed, 'too high to keep the living principle dormant.'" In the degrees of temperature, I suppose you allude to the centigrade scale, as modern French chemists have wisely adopted the Celsius thermometer, by which pure water, under a barometrical pressure of thirty inches, will freeze at zero and boil at 100°. By this scale 9.5 plus corresponds to 49.2 of Fahrenheit, an average temperature *below* that of my cellar, which proves that the French experiments did not fail from the causes stated by them, but rather by commencing *too late*. To produce a second crop by this process, we must commence as far back as the moth of a previous year.

My experiments for a third, and succeeding crops, were to *hasten the process of vature*, by producing an artificial winter.—For this purpose, I placed the eggs of the first crop, as soon as deposited by the moth, in an ice-house, and, at the end of sixteen days, submitted them to the action of solar heat, without the desired effect.

Some eggs, after remaining six days where deposited by the moth, I submitted to a winter of plus 3° Fanrenheit, by mixing sulphate of soda five parts, and diluted sulphuric acid four parts; others to a temperature of plus 10°, by muriate of ammonia five, nitrate of potash five, and water sixteen parts, and then exposed them to the solar heat. Though these attempts proved abortive, I still think that nature may be supplied with an *artificial winter*, and eggs hatched the same month in which they are deposited by the moth.

When such a desirable result is accomplished, who will fix limits to the immense wealth which the silk worm will create in this country? Silk, from remote times, has been a source of immense wealth to Asia. Its cultivation has kept pace with the intelligence and riches of Europe.—Our country has all the essential advantages of climate for its production, with a numerous and intelligent population, who cannot fail to see the advantages of appropriating to their use the valuable labor and productions of a worm, which can create a greater revolution in political economy, with such simple means as nature ever employs to work good results, than did Gaul's great emperor make in political existence with the sword, fire, and concomitant horrors of a continental war.

Yours, &c.,
C. F. DURANT.

M. Thenard has resigned the Professorship of Chemistry at the Ecole Polytechnique, and it is expected that he will be succeeded by M. Dumas.

Agriculture, &c.

From the New-York Farmer.

LIFE IN ILLINOISE; AGRICULTURE, &c.—The following communication of E. R. W., contains information not only interesting, but highly important, to thousands of our citizens who are struggling with adversity and want. It points out a path by which the man of small means and entire dependance may become, in a good degree, *independant*, with a farm, house, and fields of grain of his own.

It would be no less surprising to us, than it is to our correspondent, that so few of our citizens of small means avail themselves of the advantages of the fertile West, if we were not aware of the lack of correct information possessed by them, of the best mode of getting there, and then of living until they can *prepare* to live. There is, in truth, very little known here, of the *detail* of the process of becoming *farmers* in a new country—and it is of course viewed as a herculean task. This difficulty, however, might be easily obviated, if some intelligent western farmer, who has formerly been a resident of this city, and therefore familiar with our mode of living, would

publish a small work, showing the condition, prospects, and advantages of the country, together with judicious directions how to remove a family in the most comfortable and economical manner; advising what necessaries of life ought to be carried, and what can be obtained there to advantage,—and pointing out the best manner of commencing operations when there.

Such a work, by a judicious hand, could not fail to be highly useful; and we doubt not our correspondent, E. R. W., is a suitable person to prepare it. If he will do so, we will give it all the publicity in our power.

We shall at least hold him to his *intimation* at the close of his communication; hope soon to hear from him again.

For the New-York Farmer.

SPRINGFIELD, Sangamon Co., Ill.

MESSRS. EDITORS,—Having had some opportunity, from travel and residence in this country for a year or two past, to become a little acquainted with the state of things in these Western regions, I thought I would add to my business concern a few observations for your paper. They may be of some service to those, whom high prices and hard time at the East have induced to think of other countries, where labor is more abundant and better compensated.

It has often struck me as somewhat a matter of astonishment, that among the multitudes who earn a scanty and precarious living by their labor in the eastern cities, so few of them can make up their minds to remove to these countries, where, with no greater exertions, they could soon acquire every necessary comfort and convenience of life. Does the mere facts of our having been born and brought up in the city of New-York, and formed local attachments there, opperate so powerfully that we would rather remain there in poverty and want, than to live in another State in plenty and comfort? Let me take the case of a very numerous class in the eastern cities, those females who sew for their living. There are some few of this class who receive an adequate compensation for their labor, but the number of such is small. The great majority of them do not receive more than half enough to support them comfortably. The case of widows with small children is particularly hard. Out of the miserable pittance they receive for their labor, the best they can do is to protract a joyless existence, half fed, and half clothed —their children stunted in body for want of proper and sufficient food, and degraded in mind through want of that mental and moral training which it is impossible for the parent to provide. How is it possible for those who receive from 12½ to 25 cents for making a shirt, vest, or pants., even of the commonest kind, to maintain themselves decently, much less support and educate two or three children. Even if they received 50 cents for making such articles, (which, however, is more than hundreds of them do receive,) it would be totally inadequate for their wants, under the present prices of things. In this country, things re very different. There is, throughout the whole country, a want of laborers, in almost every branch of business. And, of course, wages are high. Those seamstresses, for instance, who cannot procure enough work at 50 cents at the east, would here have the same kind of work *urged* on them, at most seasons of the year, for 75 cents to $1 00.

There is another branch of business in which many females might find profitable employment in this country, that is, as domestics in private families. The domestic here is not exactly the same as at the east. She is not a *servant* girl—she is the *help* of the housekeeper. It is not by any means a disreputable employment. Such persons readily command from $1 50 cts. to $2 a week; in public houses something more. Most kinds of journeymen's work are done by the piece in this country, and the prices are high enough to enable a good active hand, in almost *any* business, to earn from 10 to $18 a week. Perhaps the general rate is about $12. Common laborers are worth $1 a day—good farm hands, 15 to $18 a month, and scarcely to be had at those rates. In regard to the expenses of living in this town, an idea may be gathered from the following statement of prices. Beef and pork are 3 to 5 cents a pound. Vegetables of all kinds very abundant and cheap in their season, but usually scarce and high during winter. Potatoes 25 cents a bushel. Corn meal 50 cents. Flour $11 a barrel. Butter (in summer) 12½ cents per lb., this winter it commands from 20 to 25 cents. Flour is usually worth from 3½ to 5 dollars a barrel, but the wheat crop has partially failed for 2 or 3 years past, and consequently the article is high.—Fowls are worth from 8 to 12½ cents.—Families who are provident, and lay up their stores at the right season of the year, can live here moderately. A cow can be kept during summer without any expense, as they get their living on the praries, and thrive on the abundant pasture they afford. To winter a cow would cost about 5 or 6 dollars, and for this small yearly expense, a family may have an abundant supply of milk.

One great advantage an enterprising family enjoys here, is the facility of getting a dwelling house of their own. A lot may be had for 50 or 100 dollars, and a house, small, but sufficient for a contented family, may be put up for two or three hundred.—To do this is but the work of a year or two, and the man becomes a landholder,—his dignity is considerably heigntened thereby. He feels an interest at stake in the prosperity of the town, and is far more likely to apply himself diligently to business, than while he had no such inducements to influence him.

It may be asked, will these advantages continue long? I think a short consideration of the causes which give rise to them, will show that they are like to continue for many years. The farming interest is the principle one in this State, and is eminently prosperous. The land is fertile, the climate propitious, and such a thing as a general failure of crops, I believe, is unknown. From the ease with which new farms can made frobem the prarie, and from the immense extent of prarie land now lying uncultivated, the prosperity of the farmer must long continue as great as at present. For he will have no inducement to settle in any neighborhood where he will not be well paid for his labor, when by going a little further, he can buy his land cheaper and sell his produce for more. As long as there is vacant land in different parts of this State and in adjoining States, the farming business will continue prosperous. It is the farmers who chiefly support the store keepers and mechanics of the towns, and of course the prosperity of the one will insure that of the other classes. For the same reasons, merchants or mechanics will have no cause for crowding into any place in such numbers as to overrun the business, when there are new towns continually springing up, where their commodities and labor will be in greater demand. Many persons feel an unwillingness to emigrate to the West, under the apprehension that a sort of semi barbarous state of society exists there—that the people are rough and uncouth in their manners, and without education and refinement. On this subject, I would remark, that most of the inhabitants of this State, are emigrants from the older States of the east and south, who brought with them all the education and refinement they possessed there. Enterprise and energy eminently characterise them as a body.—It was those traits of character that led them to seek this new country. In this town, you may go into a church on Sunday, and see an assembly as genteel in appearance, and as attentive and orderly in their deportment, as a New-York congregation. And you may also hear as good a sermon. There is a much larger proportion of children in Sunday schools in this town, than in the city of New-York; and most of the benevolent enterprises of the day are patronized with a good degree of liberality.—The people in their manners are usually sociable and pleasing. Strangers are welcomed with cordiality, and far less suspicion and distrust manifested than in the older countries. Upon the whole, it is only necessary to become acquainted with the character of the people here to admire it.

At some future time, I shall probably enlarge on some of these topics, and also communicate some information respecting farming in this country.

E. R. W.

From the New-York Farmer.

No. I.

GENERAL SKETCHES.—NEW-ENGLAND AGRICULTURE.

By H. C.

I propose to sketch some very general views of the Agriculture of the Northern and Western parts of the country, which I have had recently the gratification of visiting. With much of New-England, I have been long acquainted; and this season has afforded me the opportunity of seeing some of the Western parts of New-York, the North-Western and central parts of Penn-

sylvania, and parts of Michigan, and Ohio. not under all the advantages, which I could have desired; but with as many as usually fall to the lot of travellers in their transit over the country, by the usual public conveyances.

There is a strong impression prevailing, and not without plausible reasons, that the Agriculture of New-England is on the decline; I do not mean in respect to the character, but the extent of the cultivation. Much less land in proportion to the population is under cultivation than was under cultivation twenty years ago; though in respect to the modes of cultivation, and the utensils employed, especially the plough, great improvements have been made. The amount of crops, from the same extent of land, has been greatly increased, and they are more carefully husbanded than formally. Yet it is a discreditable fact, that New-England is dependant upon other parts of the country for the common necessaries of life; and has little to export, excepting perhaps a small amount of beef; and the amount of this article, which New-England exports, does not exceed that, which is brought here alive from other parts of the country.

Maine, with an admirable wheat soil in many parts, grows comparatively little; and wheat flouer with the Rochester, N. Y. brand upon it, is to be found far in the interior, a hundred miles, it may be, from the sea coast. Little Indian corn is produced, and small quantities of rye. Oats are raised in considerable amount; but not more than is demanded for home consumption. Excellent patatoes are produced; and of these as well as of hay some are sent to the capital of New-England, and there is an occasional shipment to the Southern cities. A good many cattle are driven from Maine to Brighton and likewise into the British provinces; and, as grass fed cattle, they are of a good description; but agriculture in Maine, though the State, notwithstanding its climate, possesses in this respect great advantages, cannot be set down as a primary interest of the State. The fisheries, and especially the lumber business, are the great objects of pursuit.

New-Hampshire is even in this matter, behind Maine, and this from the natural condition of the soil. To a stranger unacquainted with the hardihood and spirit of the people, it is matter of difficult solution how the inhabitants of this State are sustained. There are it is true, some sunny spots. Some extremely well managed and beautiful farms are to be met with in Greenland near Portsmouth. There is some good cultivation near Exeter and in Salisbury on the Merrimack. There is excellent, I may justly call it, pattern farming among the Shakers at Canterbury and Endfield, where all that persevering industry and untiring labor, applied with skill and judgment can accamplish, seems to have been done. There is excellent farming in that part of New-Hampshire, which lies upon Connecticut river; at Walpole, Charlestown, Claremont, Lebanon, Haverhill, and Lancaster. But a considerable portion of this State is doomed to perpetual unfruitfulness; is covered with mountains of granite, which defy all cultivation and subject to late vegetation in the Spring and early Autumnal frosts, discouraging to the enterprize and often fatal to the labor of the husbandman. Indian Corn is in most parts of the State a precarious crop. Wheat, in those parts of the State where it is at all cultivated, has for three or four years, been much cut off by the grain worm. Rye is in no part of New-England a large crop; and this too, has suffered severely from the same pest. Some small amount of cattle are raised, but the severity and length of the winters make this an expensive process.—On some of the Connecticut river lands the crops of oats have been abundant, in some instances rising to ninety bushels to the acre; but nothing like this is to be generally calculated upon and hardly an approach to the necessary supply of bread stuff is at any time produced in the State. There are some valuable intervale lands near the head waters of the Saco, which present favorable examples of good cultivation; but they are quite limited. Considerable portions of the State are well adapted to the growth of wool; and at present New-Hampshire may boast of some as well managed flocks; and the production of some as fine wool as any part of the world can furnish.

Vermont is, undoubtedly, the best as it is the most exclusively Agricultural State in New-England. The Indian corn crop in Vermont, is, however, a very precarious crop on account of the climate; and it produces at present, comparatively little wheat. Wheat was formerly cultivated in Vermont with much success, but for various reasons the cultivation for a few years past has fallen off. Wool is now the great object of attention, and the sheep husbandry is pursued with eminent skill and advantage. Vermont likewise may boast of some of the finest dairies in the country; and a large amount of butter and cheese are sent out of the State. The town of Barnet, on the banks of the Connecticut, has been long and deservedly celebrated for its careful cultivation and excellent dairy produce. The Agriculture of the towns on the Western side of the mountains, and on the lake shore is very superior.

The Agriculture of Massachusetts, is, with few exceptions, in a compara ively humble state. Of bread stuff, it produces but a small part of its necessary supply. Of wheat, a very small amount is raised. Of rye, much more than of wheat, but the amount is not large. Indian corn is more largely cultivated, but the farmers, who produce more than five hundred bushels per year, are a small number. Barley is cultivated to some extent in some parts of the State; in others the cultivation has been abandoned on account of the grain worm, believed to be the same by which the wheat has been cut off, but this fact is not as yet ascertained. Oats are a small crop, and great quantities of horse feed, oats, corn, and hay are imported into the sea ports and their vicinity, a considerable amount of broom corn is raised; and the brush is manufactured and sent into different parts of the Union; and the hops grown in this State Vermont, and New-Hampshire, form in some years a notable article for exportation. Considerable beef is fattened in Massachusetts; and Worcester and Berkshire counties especially, are extensively engaged in the business of dairying. A large amount of wool, and some of the finest qualities are grown in this State. The culture of the mulberry and the feeding of silkworms are begining to be objects of attention. Some hemp and tobacco are raised, but the cultivation is quite limited. Massachusetts however, though highly spirited, enterprising, and liberal in her agricultural improvements by means of well managed societies, liberal donations from the State, and the disinterested efforts of many eminent individuals, has comparatively little agricultural wealth; the farms are generally small, and in many cases cultivated as an appendage to a trade, profession, or some commercial pursuit.

Rhode Island is essentially a manufacturing and commercial community. With the exception of a few favored spots, the soil is sterile and hard of cultivation. The Island itself, from which the State derives its name is singularly beautiful in its position and aspect, in most cases, of a strong and productive soil, and having singular advantages for obtaing manure on account of its proximity to the sea. Much sea grass, rock weed, and kelp are obtained, and in some places fish, the munhaden, which are taken in great abundance, are freely and successfully used. With the exception however, of the product of potatoes, and especially of onions, which it grows to a large extent, the State has no agricultural produce to export; and is almost wholly dependant on other places for its supply of bread.

Connecticut likewise is a manufacturing State; and agriculture scarcely exists as an exclusive profession. Some parts of Connecticut have been long remarked for the extensive cultivation of Onions, and a considerable amount of wool and tobacco is raised in the State, but its agricultural products are by no means equal to its wants. Connecticut has some large, and is full of small, manufacturing establishments; and no part of the United States has a greater appearance of neatness, comfort, and good economy. Its manufactured articles are found in all parts of the Union.

It is sometimes asked how, with a soil and climate not very propitious, the Yankees live, and live in comfort; and if they do not acquire large and overgrown fortunes, yet present more than a fair proportion of examples of humble competence, and as much independence as usually falls to the human condition? The answer may be comprehended in three words, industry, enterprise, and frugality. Climate and soil may be against them, but the condition in which Providence has thrown them, contributes to nourish a spirit of self-dependance, and to form a hardihood of character which is the foundation of their success. Their enterprise carries them into all parts of the country, and the world; and if the usual traits of the Yankee character go with them, their enterprise seldom disappoint their calculations.

I trust it was not mere prejudice, for of that I should feel quite ashamed; that in travelling through the new parts of the country, I persuaded myself that I could, in most cases, point out a Yankee settlement or homestead, without inquiry. In several instances, where I attempted the experiment, the inquiry confirmed my conjectures. There was a certain air of care-

fulness about the house and out-buildings which distinguished them from most others. I am far from thinking their ways are always best; and as it respects agriculture, they are far behind the Pennsylvania Farmers; but in the capacity of "getting along" on small means, and with honor, comfort, and independence, no people surpass them.

The Yankee too has an officiousness in other men's matters, which if it has its evils, as it is sometimes complained of, it is not without its advantages. He no sooner plants himself in any situation, than he has a "notion" that the community would be better for good roads, secure bridges, a school house, an academy, and a meeting house; and these matters, in general standing in pretty close connection, usually, though silently, announce, who presides over the municipality. The Yankees have a propensity too to have their houses painted, their yards neatly secured, their gates on the hinges and shut, and the pigs kept out of the hall and the front parlour.

This appearance of neatness, care, frugality, and thrift, indicates generally the residence of a Yankee settler; and leads us back to the circumstances under which such a character is usually formed.

With a hard and unpropitious soil, a severe climate, and a population which, if confined to its own resources, would press sorely upon its means of subsistence, he is compelled to labor and exertion, that he may live; obliged to gather up the fragments that remain, so that nothing shall be lost, he is trained in habits of extreme frugality; and his invention is continually toned and stimulated by the great spur of necessity, and a spirit of enterprise aroused and cherished, that he may increase his resources. When the Yankee emigrant carries these habits with him to his new place of residence among the fertile lands of the West, success and wealth are certain; but it too often happens, that when he finds himself in a situation where such constant and strenuous exertions are not required, and he discovers that even moderate exertion is most amply rewarded, far beyond his experience and even his imagination, the love of ease, almost an essential element in the human constitution, prevail over his early habits of industry; abundance begets extravagance and waste; he sinks into the negligent habits of those around him; and stops short in the very midst of improvement. H. C.

January, 1837.

From the Farmers' Register.

OBSERVATIONS MADE DURING AN EXCURSION TO THE DISMAL SWAMP.

BY THE EDITOR.

The following article from the Farmers' Register, will be found highly interesting.

Whoever has heard any description, however slight and imperfect, of the great morass known by the name of the Dismal Swamp, must have been interested and impressed by the peculiar features and remarkable circumstances mentioned. Yet few persons have made any personal observation of, or paid much attention to these things, except those whose near residence, and early and long continued business and habits of life, have made them so familiar with the swamp, that they have lost, or perhaps never enjoyed, the freshness of feeling which novelty would have excited. Persons thus long acquainted with the ground, do not seem to think its circumstances very remarkable, and therefore do not offer their information to strangers. On the other hand, strangers, who at least might learn the facts thus acquired by residents, do not even direct inquiries so as to draw them forth, because totally ignorant of their interest, and even existence. Few strangers would ever have been induced by curiosity to attempt the great labors necessary for even a slight examination; nor would any have probably seen more than some points on the outer margin, but for the great highways now opened through the swamp—the great canal, the road on its bank, from Norfolk to North Carolina, and the railway which dips into the northern extremity of the swamp. These passages have given to thousands a rapid passing glance at certain portions of the scenery: but in every other respect, these numerous passengers have added nothing to the scant information previously possessed by the public. No visiter has made the investigation of the peculiarities of this unknown land a main object—and still less has any person paid attention to the geological and agricultural aspects in which this region well deserves consideration. I am but little qualified, either by scientific acquirements, or by opportunity for personal investigation, to supply these deficiences. Still, in the absence of better digested and more accurate information, I will now offer such facts as were learned or observed, during a recent hurried visit to the Dismal Swamp, together with the speculations that these facts and observations suggested to my mind. Under circumstances so unfavorable for careful or full investigation, it is not probable that mistakes can be avoided. But I am willing to hazard being found in error, in the hope that the needed corrections may be furnished, and more full as well as correct information be given, by others better acquainted with the localities.

The part of the Dismal Swamp lying in Virginia, is about 25 miles from east to west, and about 20 from north to south—that is from near Suffolk to the Carolina line. The swamp stretches perhaps 20 miles more southward within North Carolina, but with much contracted width, and limits not well defined on maps, or by report. With such minor variations as will be mentioned hereafter, the whole of this extensive region is one great morass, or quagmire, except for the partial firmness caused by its cover of vegetables, and their matted roots. It would be naturally supposed that the swamp was much lower than all the surrounding lands, and the general receptacle of the numerous streams flowing from them. But, on the contrary, the swamp is higher than nearly all the firm and dry lands that encompass it, and the interior of the swamp is generally higher than the outer parts. The only exception to both these statements is found on the western side, where for some distance, say 12 or 15 miles, the streams flow from higher land into the swamp, and supply all its abundant and overflowing water. But towards the north, east and south, the waters flow from the swamp to different rivers, and give abundant evidence, by their courses and their rate of descent, of the swamp being higher than the surrounding drier and firm ground. I do not mean that, at the junction of the two, the swampy ground is highest. On the contrary, it is generally bordered by a flat ridge of land perceptibly, though very little higher: but this ridge slopes downward on all sides except the west, and soon descends to a level greatly below the general surface of the swamp. The accurately levelled profile of the railway from Portsmouth to Suffolk, and of the Dismal Swamp Canal, and the Land Company's Canal, all furnish still stronger and more accurate evidences of the general fact stated. The railway passes through about 4 miles of the northern extremity of the swamp—and is there higher than when on the firm land some miles away on either side; and is 6 to 7 feet higher than on firm and dry ground near to Suffolk and to Portsmouth. The central part of the swamp is 5 or 6 feet above the middle section of the Dismal Swamp Canal, which section is some 13 feet above the rivers into which it empties at both ends—and these rivers are not more than 5 or 6 feet below much of the dry but low-lying land of this generally flat country. If it could be supposed that the streams, which flow into the western part of the present swamp, had for ages been bringing, not water, but mire almost as fluid as water, the spreading of that mire over the basin of firm subsoil, which now underlies the swamp, would have caused nearly such slopes, and form of the surface, as now exist—descending from the issuing streams on the west to the centre of the area, and thence descending towards every other part of the circumference. The surrounding slightly elevated rim, and various small and narrow ridges of poor and firm land, which rise like low islands in various places above the surface of the swamp, and the gradually descending slopes from such summits under the adjacent swamp soil, all give countenance to the supposition that the swamp is a comparatively recent formation or deposite on the lower foundation.

But whence came this enormous deposite of 25 miles in width, and in many parts 10 to 15 feet in thickness? The flood of liquid mire, which was supposed above for the purpose of illustration, of course was impossible. Neither could the deposite have been made by the alluvium of the streams—because they bring down very little, and because the soil of the swamp is not such as would be formed by such a cause. It is not principally *earthy*—as are all alluvial deposites, of every grade of fertility and consistence—but *vegetable*—and this peculiar and regular constitution may point out the origin, and explain the growth, of this vast body of high morass.

Before seeing the Dismal Swamp, and making some examination of its different soils, I had always considered that no true peat soil existed in Virginia—and that it could not form, nor remain long, if already formed, owing to the warmth and length of our summers, and the consequent ease with which vegetable matters runs into

fermentation and putrefaction. I have several times incidentally expressed th opinion in different publications, and th last time, but a few days before visiting th region. (Far. Reg. p. 594 vol. IV.) still hold this opinion,as to all common lan and localities, and in circumstances simil to those in which most peat mosses exis in Europe. But the Dismal Swamp i certainly a peat soil, or soil formed almos exclusively of vegetable matter, though th kinds of plants, and the manner of the for mation, may differ much from Europea peat. In Scotland, the climate is so damp and the summers are so short and cool, tha in many situations, the natural vegetation of one year, if left undisturbed, will not rot during the next; and it remains, either wholly or principally. adding to the height of the surface soil, without giving it any increase of fertility. If water flows into such land, it is absorbed by the vegetable matter, and acts to give greater vigor to growing mosses, and other aquatic plants, and still more to retard their putrefaction when dead. Thus, in the situations most favorable to the formation, that is the coldest and most moist, (witkout being overflowed by water,) the peat grows to many feet in depth—and even on pasture lands, or arable left untilled, the surface becomes peaty or moory, having an excess of vegetable matter, but in that undecomposed state which makes a soil less, instead of more productive under tillage. Hence, the peats of Britian, whether of 6 inches or 6 yards deep, are barren, or at least tending to make a soil unproductive: and when brought under tillage, besides drainage, these soils require operations to decompose their excess of vegetable matter, to fit them for producing grain crops. For this purpose, the dry and shallow peats are pared and burnt—and the deep peats are lined, dug up and stirred, and even manured with dung, to quicken fermentation. Now no such formation of soil can take place in such a climate as ours, because the summer's heat and continuance are more than sufficient, under ordinary circumstances, to ferment all the vegetable matter that the preceding year had produced. Paring and burning the soil, which is a common and excellent part of preparatory tillage in England, on any common highland soils that have been left in pasture, could not be effected in Virginia—and if it could, would be injurious, by destroying the vegetable matter, which, if not burnt, would be decomposed soon enough.

It is true that we have soils as entirely of vegetable formation as many of th peats of Britain. Such are all the fresh water tide marshes, parts of many swamp and the whole of the great Dismal Swamp But the difference I take to be this. Th vegetable soils, being kept constantly eithe covered by, or saturated with water, ar kept from entirely rotting, and are increased in thickness by annual accessions o vegetables. But though not enough rotte to lose much of the bulk, they are enough so to form manure: and these lands nee only perfect draining to be at once highl fertile. Then indeed the soil begins to ro too rapidly; and if kept dry, will continue to rot as long as a great excess of vegetable matter remains. Hence the opinion hich I have long maintained by reasoning, and to my very great loss have seen roved in practice, that our fresh wate. de marshes, if diked and drained, will ro way, as deep as they are made dry enough or tillage.

The soils of the Dismal Swamp are much nearer to the peat of Europe than any other that I have observed: indeed the upper layers of the juniper lands, to the depth of some inches, may be formed of the same mosses. But below the living roots, though still it is all of vegetable formation, the plants are so rotted they are simply a soft black mud. The general cover of all this kind of ground, under the shelter of the large trees, shrubs, or reeds, is a thick carpet of tender mossy plants, which rise to 4 or 5 inches high, and which are taken up by the hand so easily, that they seem to have scarcely any hold of the ground. Where these grow, the surface is as wet as water can make it, if not covered an inch or two. This, the least solid of the whole, is the soil most favorable to the juniper trees—which stand, barely supported by the long tap root, in these quaking bogs of "surf" or "sponge," as this earth is called by the laborers.

The peat of Europe, or at least certain qualities of it, is good fuel: and I have but lately learned from a very intelligent gentlemen who resided in Boston during the late war with England, that the peat of Massachusetts was then used for fuel, in consequence of the scarcity and high price of coal. In an article in a New England paper which has since reached me, I see the use of the same fuel recommended at this time. The vegetable soil of the Dismal Swamp, (like that of our tide marshed,) when dry, is highly combustible—and being principally of vegetable origin, would leave but little ashes, or earthly residue. But on account of being so well rotted, it would probably make but poor fuel.

The immense and continually growing fields of peat, which are spread over the earth in cold countries, are probably the materials for future beds of coal, after being buried deep in the earth by some of the convulsions of Nature which have so often changed the face of the globe. When compressed by the weight of mountains to the density of stone, the peat of the most open texture, or the most rotted and worthless, may become a coal valuable for fuel I do not believe that geologists admit this theory of the formation of coal: but it seems to me a more plusible origin than from other than peaty matter.

It is not difficult to conceive how the soi of the Dismal Swamp should have been growing in thickness, and spreading over more extent of surface; and that it shall continue to do both, if the existing causes are suffered to operate. The streams which flow from the western highland are sucked up by the earth, which from the nature of its composition, absorbs and holds water like a sponge: and it is thus filled or very slightly overflowed by water, and yet no part covered deeply, because the superfluous water finds or forms channels to escape into rivers, which head at various adjacent and much lower points. This continual wetness, and the extreme richness of the soil, combine to produce a prodigious growth of aquatic plants, of various kinds, and of all sizes, from the diminutive moss to the gigantic cypress. The wet soil causes more evaporation than would take place from water alone—and evaporation causes cold—and the heat of the sun is in great measure excluded by the thick cover of trees. Hence, a coldness of the earth, suitable to a far more northern climate is produced, and maintained. The leaves and moss, and other vegetable matters that fall, are but partially decomposed, and thus add annually to the thickness of the soil.

As might be inferred from the operation of the causes named, but little of the surface of the swamp is many inches either above or below the water, though the level of the swamp is in some places five feet lower than in others, and perhaps much more. Standing, but shallow water tends to raise the earth to its surface: and if, by drainage, drought, or any other circumstance, a part of the land should be so much higher than the water as to become quite dry, the first accidental fire would reduce it to a lower level.

It may well be supposed, from the foregoing general description, that the swamp furnishes very difficult ground to travel upon. But I had no adequate conception of the magnitude of the difficulties before personally making the trial. In addition to the general wetness of the earth—the most dry being a mire, from sinking in which the traveller is guarded only by the mat of living roots—the undergrowth of evergreen shrubs, and vines or reeds, cause still greater impediments to his progress.

It is difficult to imagine a sufficient motive to have induced any man to penetrate a mile into the swamp, before paths were cut and made solid enough, for the purpose of getting the timber. And these obstacles long prevented any person from going far from the borders. It was as late as some twenty years before the revolutionary war, that the lake, which is the most beautiful and magnificent feature of the region, was first discovered by a hunter, named Drummond, who had lost his way, and therefore wandered miles through this "Slough of Despond." He could not have reached the lake in the shortest line from the main land in less than three miles—and probably it was many more. What must have been the sensations of a man, so lost in such a gloomy labyrinth, when he came suddenly upon the border of this splendid sheet of wide water! Lake Drummond is nearly oval—seven miles long, and more than five wide. It has no beach, the thick and tall forest being at and in its margin. The water is generally even with, and often gently overflowing its banks—and the banks (if such they may be called) sink perpendicularly, so that whether the waters of the lake are higher or lower than is usual, it makes no difference in the breadth of the water, and but little difference in the general appearance of the shores. There may

be a difference between the highest and lowest water, from the opposite effects of the wettest and dryest seasons, of three or four feet—and there would not be as much, perhaps, but for the artificial reducing of the water, in the dryest seasons, to supply the great canal for the purposes of navigation.

This beautiful lake—and which no doubt seems the more beautiful on account of the gloomy scenery passed to reach its borders; is so much like belonging to fairy land, that it is not strange that it should have been connected with sundry popular delusions.—Some persons at first had affirmed, and others believed, that the lake had no bottom, or that it communicated with the neighboring ocean by a subterraneous passage.—There was but slender ground for this delusion, as the lake is quite shallow, and the level of the bottom very regular. Mr. Mills Riddick sen. of Suffolk, told me that he assisted Commodore Barron in sounding across the lake. The depth about the middle, where greatest, was 15 feet. The bottom is of mud like the swamp, but sometimes a pure white sand colors the mud a foot, or perhaps more, in depth.

About the time that the lake was discovered, another event took place which produced ultimately the present proprietary state, and peculiar business and management of the swamp. This was the "taking up" by Gen. Washington, and a few other gentlemen acting upon his suggestion, of all the then unappropriated lands of the Dismal Swamp in Virginia. Before that time no persons had taken possession (by course of law,) of any lands, but those at and near the margin of the high land, because the interior lands were not deemed worth paying the lowest taxes on. Gen. Washington whose business as a land surveyor gave him many opportunities of acquiring possession of valuable public lands, and who obtained much of his wealth in that manner—saw a rich farm on the border, which had been rendered productive by being drained. Thinking that the whole swamp was equally available for cultivation, he formed the association above named, bought the farm in question, and took up all the remaining State lands, estimated then at 40,000 acres, but which are now supposed to be much more. They excluded the lake from their patent, though it was completely surrounded by their land, considering it not worth paying a tax for.—By this ill judged economy the company has since suffered. When the Dismal Swamp Canal Company was afterwards chartered, they were granted by the commonwealth the exclusive use of the water of Lake Drummond to feed their canal—and this grant serves to shackle the efforts of the Land Company, (since also incorporated,) and would prevent the adoption of any general plan for draining. As is usually the case with corporations that come in contact, they seem more fond of squabbling with and opposing each other, than of uniting in any general procedure for the good of both.

The only object of the Land Company at first were agricultural—and they commenced, and for years carried on tillage on their farm and drainage to extend it. For the latter purpose, they dug a canal of some miles in length from the high land to the lake, which is still large enough for the passage of boats. This is now known as the "Washington Ditch." But whether their plans were judidious, or had the defects inherent in such joint stock companies, their labor and capital yielded little profit. The war soon followed, and before its end half their slaves went off to the enemy, as was generally the case in places so near their encampment.—After peace was made, the work still went on badly, until the Company undertook the getting of juniper shingles. This business, which was not at first counted on, has since become their sole pursuit, and immensely profitable, and must continue profitable until the timber is mostly consumed, which indeed is rapidly approaching completion. The shares into which the stock was originally divided, have increased in price from $3000 each to more than $15,000; and the dividends made are large even for the highest price. But unlike most other stocks, this is diminishing in real value, with every year's waste of timber—and unless the land itself is made of value by drainage, the stock of this rich company will, at some future time, lose its market value, as rapidly and to many owners as unexpedly, as it was formerly acquired.

What I have stated of the Land Company, was learned from gentlemen who have been long and well acquainted with the general affairs of the company; but as their knowledge was not official, and rested on memory, facts may have been incorrectly stated as to dates, amounts, or other minor circumstances.

It had long been my intention to visit these scenes—but it was only very lately that a first and hasty visit was made, which has enabled me to judge of and to describe them, as far as will here appear.

On Nov. 17th, I reached Suffolk by way of the railway, from Portsmouth, which passes through a few miles of the swamp at its northern extremity, and thus permitted a first slight glance. It seems unfortunate that the first approach to the swamp, of almost every person hereafter, will be on the rapidly moving railway train. The savage gloom of the face of nature is altogether unsuited to the highly artificial facilities by means of which the traveller is flying past—and the discordance serves to lessen the high gratification which either the conveyance or the scene alone would cause, when new to the observer.

It was too late on that day to commence a voyage to the lake—nor could it be made on the next: for though every thing else necessary had been carefully provided, there were no good boatmen out of the swamp—and without those accustomed to the peculiar mode of navigating the canal, there was no getting on. The leisure afforded by these disappointments permitted me to visit some of the most interesting lands in the neighborhood—and to see some improvements on swamp lands, to which my remarks will now be confined. Having mounted on horseback, we returned by a different route, to the swamp where it is crossed by the railway. This great public improvement had effected much of the first and heaviest labor necessary for draining the adjacent swamp lands, and had clearly indicated the proper mode to pursue—and the proprietor on one side, Mr. David Jordan, was making proper use of the opportunities thus offered. The swamp land here is 6 to 7 feet higher than the part of Suffolk which the railway passes over; and the ditches dug on each side, to drain and to raise the track of the road, furnish deep and wide discharging outlets, to receive the waters from all smaller ones draining from the swamp. This land had been filled or covered with water before the railway was begun: the ditches dug by Mr. Jordan, are at right angles to the road, and emptying as above stated, have laid the land dry, and kept the water as much below the surface as the depth of his ditches, which is from 2 to 2½ feet. Still this is not enough for so spongy a soil, which will draw much moisture upward, and from considerable depths. I advised giving 10 or 12 inches more of depth to the smaller ditches, and still more to the large railroad ditch, which can be easily done. The water comes from the general overflowing or saturation of the swamp, and therefore a good large ditch ought to surround the whole piece designed to be reclaimed.

This tract of land was bought by Mr. Jordan and Mr. Benton, after the railway was made, at $7.50 the acre. Immediately adjoining, and also on the road, another body of land of 2000 acres had been bought before the road was commenced, for only $900, a most striking evidence of value thus increased. All the wood is now made marketable, and is cut to a great profit, and sent by the train to Portsmouth. It is cut (by the job) into 4 feet lengths, at 50 cents the cord; carted and corded along side the road for 25 cents more—(and this expense might be lessened one-half, by making branch wooden railways—) and the wood is sold at $1.25 in that situation, and now commands $4 if delivered in Portsmouth. As but little superintendence is required, the profit from an acre must be very considerable.

The swamp soil next the railway was from 1½ to 2 feet thick, resting on a good dark colored clay. The soil did not appear to vary materially in texture, as seen in the new ditches several hundred yards towards the interior. It is of the more firm and earthly kind, known as "gum swamp," but which seems to be composed in great measure of vegetable matter. It appears precisely like the soil of the gum and ash tide swamps on James River. Farther from the railroad, the ditch reached land which formerly had been burnt over, so as to destroy its trees, and it was now covered by the closest possible growth of reeds, among which were scattered many young pines. The soil did not seem to change, otherwise than by becoming deeper. The sub-soil here is a stiff yellowish clay.

(To be Continued.)

Advertisements.

STEPHENSON,

Builder of a superior style of Passeng. Cars for Railroads.

No. 264 Elizabeth street, near Bleecker street, New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad now in operation. J25tf

FRAME BRIDGES.

THE undersigned, General Agent of Col S. H. LONG, to build Bridges, or vend the right to others to build, on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish all materials for superstructures of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington, two miles from the former place. Across the Metawaukeag river on the Military road, in Maine. On the national road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Patterson Railroad, in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contoocook river at Henniker, N H. Across the Souhegan river, at Milford, N. H. Across the Connecticut river, at Haverhill, N. H. Across the Contoocook river, at Hancock, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesse river, at Squakiehill, Mount Morris, New-York. Across the White River, at Hartford Vt. Across the Connecticut River, at Lebanon, N. H. Across the mouth of the Broken Straw Creek, Penn. Across the mouth of the Cataraugus Creek, N. Y. A Railroad Bridge diagonally across the Erie, Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 500 feet in length; one of the spans is over 200 feet. It is probably the FIRMEST WOODEN BRIDGE ever built in America.

Notwithstanding his present engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms.

MOSES LONG.

Rochester, Jan. 13th, 1837. 4—y

HARVEY'S PATENT RAILROAD SPIKES.

THE Subscribers are manufacturing and are now prepared to make contracts for the supply of the above article. Samples may be seen and obtained at Messrs. BOORMAN, JOHNSON, AYRES & Co. No. 119 Greenwich Street, New-York, or at the Makers in Poughkeepsie, who refer to the subjoined certificates in relation to the article.

HARVEY & KNIGHT.

POUGHKEEPSIE, October 25th, 1836.

The undersigned having attentively examined HARVEY'S PATENT FLANCHED and GROOVED SPIKES is of the opinion, that they are decidedly preferable for Railroads to any other Spikes with which he is acquainted; and shall unhesitatingly recommend their adoption by the different Railroad Companies whose works he has in charge.

BENJ. WRIGHT,
Chief Engineer N. Y. & E. R. R.

NEW-YORK, April 4th, 1836.

Harvey's Flanched and Grooved Spikes are evidently superior for Railroads to those in common use, and I shall recommend their adoption on the roads under my charge if their increased cost over the latter is not greater than some twenty per cent.

JNO. M. FESSENDON, Engineer.

BOSTON, April 20th, 1836. NO. 1—6t.

ALBANY EAGLE AIR FURNACE AND MACHINE SHOP.

WILLIAM V. MANY manufactures to order IRON CASTINGS for Gearing Mills and Factories of every description.

ALSO—Steam Engines and Railroad Castings of every description.

The collection of Patterns for Machinery, is not equalled in the United States. 9—1y

TO CIVIL ENGINEERS, &c.

E. & G. W. BLUNT, 154 Water-st., corner of Maiden Lane, have recently received an assortment of LEVELS, from different manufacturers, among others from Troughton & Surins, which they warrant of the first quality. Circumferentors, Levelling Staves, Prismatic Compasses, Mathematical Instruments, Books for Engineers, etc., constantly on hand.

One of the above firm is now in England superintending the manufacture of Theodolites, Transit Instruments, etc.—and any orders for Instruments, not now on hand, will be forwarded him, and executed promptly. 5—tf

ARCHIMEDES WORKS.

(100 North Moor street, N. Y.)

NEW-YORK, February 12th, 1836.

THE undersigned begs leave to inform the proprietors of Railroads that they are prepared to furnish all kinds of Machinery for Railroads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Railroad none of which have failed—Castings of all kinds Wheels, Axles, and Boxes, furnished at shortest notice.

H. R. DUNHAM & CO.
4—vtf

AMES' CELEBRATED SHOVELS, SPADES, &c.

300 dozens Ames' superior back-strap Shovels
150 do do do plain do
150 do do do caststeel Shovels & Spades
150 do do Gold-mining Shovels
100 do do plated Spades
50 do do socket Shovels and Spades.

Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed,) manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.
No. 2 Liberty street, New-York.

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No. 8 State street, Albany

N. B—Also furnished to order, Shapes of every description, made from Salsbury refined Iron v4—tf

AN ELEGANT STEAM ENGINE AND BOILERS, FOR SALE.

THE Steam Engine and Boilers, belonging to the STEAMBOAT HELEN, and now in the Novelty yard, N Y. Consisting of one Horizontal high pressure Engine, (but may be made to condense with little additional expense) 36 inches diameter, 10 feet stroke, with latest improved Piston Valves, and Metalic packing throughout.

Also, four Tubular Boilers, constructed on the English Locomotive plan, containing a fire surface of over 600 feet in each, or 2500 feet in all—will be sold cheap. All communications addressed (post paid) to the subscriber, will meet with due attention

HENRY BURDEN.

Troy Iron Works, Nov. 15, 1836. 4—tf

A SPLENDID OPPORTUNITY TO MAKE A FORTUNE.

THE Subscriber having obtained Letters Patent, from the Government of France, granting him the exclusive privilege of manufacturing Horse Shoes, by his newly invented machines, now offers the same for sale on terms which cannot fail to make an independent fortune to any enterprising gentlemen wishing to embark in the same.

The machines are in constant operation at the Troy Iron and Nail Factory, and all that is necessary to satisfy the most incredulous, that it is the most VALUABLE PATENT, ever obtained, either in this or any other country, is to witness the operation which is open for inspection to all during working hours. All letters addressed to the subscriber (post paid) will receive due attention.

Troy Iron Works, HENRY BURDEN.

N. B. Horse Shoes of all sizes will be kept constantly for sale by the principal Iron and Hard-ware Merchants, in the United States, at a small advance above the price of Horse Shoe Iron in Bar. All persons selling the same, are AUTHORISED TO WARRANT EVERY SHOE, made from the BEST REFINED IRON, and any failing to render THE MOST PERFECT SATISFACTION, both as regards workmanship and quality of Iron, will be received back, and the price of the same refunded. H. BURDEN. 47—tf

NEW ARRANGEMENT.

ROPES FOR INCLINED PLANES OF RAILROADS.

WE the subscribers having formed a co-partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S Durfee & Co., will be done by the new firm, the same superintendant and machinery are employed by the new firm that were employed by S. S. Durfee & Co. All orders will be promptly attended to, and ropes will be shipped to any port in the United States.

12th month, 12th, 1836. Hudson, Columbia County State of New-York.

ROBT. C. FOLGER,
33—tf. GEORGE COLEMAN.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersunk heads suitable to the holes in iron rails to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

** All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y., July, 1831.

** Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes. (1J23am) H. BURDEN.

RAILWAY IRON, LOCOMOTIVES, &c.

THE subscribers offer the following articles for sale.

Railway Iron, flat bars, with countersunk holes and raitred joints,

										lbs.	
350 tons	2½	by	½,	15 ft in length, weighing						$4\frac{60}{100}$	per ft.
280	"	2	"	½,	"	"	"	"		$3\frac{50}{100}$	"
70	"	1½	"	½,	"	"	"	"		2½	"
80	"	1½	"	½,	"	"	"	"		$1\frac{25}{100}$	"
90	"	1	"	½,	"	"	"	"		½	"

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz. 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2½, 2¾ 3, 3¼, 3½, 3¾, and 3¾ inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand flax.

Also Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and ston block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

Mr. Solomon W. Roberts, a highly respectable American Engineer, resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron &c. ordered through us

A. & G. RALSTON.

28 tf Philadelphia, No. 4, South Front st.

MACHINE WORKS OF ROGERS, KETCHUM AND GROSVENOR, Paterson, New-Jersey.

The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch

RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles, Springs and Flange Tires; Car Wheels of cast iron, from a variety of patterns, and Chills; Car Wheels of cast iron, with wrought Tires; Axles of best American refined iron; Springs; Boxes and Bolts for Cars.

COTTON WOOL AND FLAX MACHINERY,

Of all descriptions and of the most improved Patterns, Style and Workmanship.

Mill Geering and Millwright work generally; Hydraulic and other Presses; Press Screws; Callenders; Lathes and Tools of all kinds, Iron and Brass Castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR
Patterson, New-Jersey, or 60 Wall street, N. Y
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